

GROUNDWATER MONITORING AND WELL REDUCTION PLAN

**ATLANTIC RESEARCH CORPORATION
RCRA CORRECTIVE ACTION SITE
5945 WELLINGTON ROAD
GAINESVILLE, VIRGINIA 20155**

Project No. 229931.0003

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ACRONYMS

µg/L	micrograms per liter
111TCA	1,1,1-trichloroethane
112TCA	1,1,2-trichloroethane
11DCA	1,1-dichloroethane
12DCA	1,2-dichloroethane
11DCE	1,1-dichloroethene
ARC	Atlantic Research Corporation
COCs	constituents of concern
Geosyntec	Geosyntec Consultants Inc.
MCL	Maximum Contaminant Level
NDTS	Northern Deep Groundwater Treatment System
PCE	tetrachloroethene
PMWs	Performance Monitoring Wells
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Level
TCE	trichloroethene
TRC	TRC Environmental Corporation
USEPA	United States Environmental Protection Agency
VISL	Vapor Intrusion Screening Level
VOCs	volatile organic compounds

EXECUTIVE SUMMARY

This Groundwater Monitoring and Well Reduction Plan (Plan) proposes modifications to ongoing groundwater monitoring and monitoring well reductions at the Atlantic Research Corporation (ARC) RCRA Corrective Action Site at 5945 Wellington Road in Gainesville, Virginia 20155 (Site) based on review of Site progress and ongoing monitoring needs.

The 2015 Sampling and Analysis Plan (2015 SAP) utilized 121 monitoring wells at the Site screened in shallow groundwater (62 total shallow monitoring wells; 33 for sampling and 29 for water levels only) and deep groundwater (59 total deep monitoring wells; 22 for sampling, 33 for water levels only, 2 for injection, and 2 off property). The proposed modifications would reduce the number of shallow wells to 21 (all to be sampled) and the number of deep wells to 29 (21 to be sampled, 6 for water levels only, and 2 for groundwater injection). Seventy-four (71) wells are proposed to be abandoned consisting of 41 shallow and 30 deep monitoring wells.

The Project Cub area represents a portion of the Site (see Figure 1) that is planned for near time re-development. The 2015 SAP utilized 26 monitoring wells within the Project Cub area consisting of 14 shallow and 12 deep monitoring wells. This Plan proposes to abandon 12 shallow and 7 deep monitoring wells and will retain 2 shallow and 5 deep monitoring wells within the Project Cub area.

All existing wells were evaluated for potential abandonment with respect to the objectives of the approved 2015 SAP and the need for continued water level measurements, if any. Each well was evaluated for redundancy with other well locations, based on geographic position, plume position, sampling depth and geology, and the constituents of concern (COCs) present in that well. The evaluation of all wells utilized the most recent sampling data for each well in addition to historical data.

In its evaluation TRC also considered the general presence of stable to decreasing COC concentrations across the Site, the proposed restriction against the use of groundwater underneath the Site, and planned requirement for vapor barriers installed during new construction as part of redevelopment process.

It is anticipated that this Plan (if approved) would be implemented in 2017 and continue until additional amendments are approved by USEPA in the future if warranted.

1.0 INTRODUCTION

This Groundwater Monitoring and Well Reduction Plan (Plan) presents the rationale for ongoing groundwater monitoring and monitoring well reductions at the Atlantic Research Corporation (ARC) RCRA Corrective Action Site at 5945 Wellington Road in Gainesville, Virginia 20155 (Site). The Site location is shown on Figure 1. It is anticipated that upon approval by EPA this Plan will be implemented in 2017 and continue until additional amendments are approved by USEPA in the future if warranted.

Dating back to the 1980s, approximately 520 wells or soil borings were developed in support of the RCRA Facility Investigations (RFI) at the Site, including the supplemental RFI conducted by Geosyntec, Inc. (SRFI; Geosyntech, 2009; 2012). Various interim measures were conducted in the 2000s and 2010s to address soil and groundwater conditions. Active remediation at the Northern Deep Treatment System (NDTS) to treat the deep groundwater zone is ongoing. Concentrations of key chemical constituents such as perchlorate and chlorinated solvents have been either stable or have decreased since at least 2009. Similarly, the concentrations of these chemicals have also been either stable or decreased in shallow groundwater since at least 2009. Surface water conditions have also been monitored and are consistently below screening levels. The Human Health Risk Assessment was approved by USEPA on October 16, 2016. In sum, it is clear that the Site is well understood and that the need for continued extensive monitoring is not warranted in the future.

2.0 BACKGROUND

Approximately 238 well or boring locations were abandoned by ARC during March-April 2017 following a well abandonment decision tree in Geosyntech's 2011 *Work Plan for 2011-2012 Groundwater Monitoring and Well Maintenance Activities* (2011 Work Plan), which started the transition from Supplemental RFI sampling to long-term monitoring of the NDTS. Approximately 161 additional well and soil boring locations are also considered abandoned and fall into three categories: a) 54 wells abandoned prior to 2013; b) 20 wells approved for abandonment that will be abandoned when accessible¹; and c) 87 possible locations² approved for abandonment that have not been located in the field following a third search for these historical locations. The approved 2015 Sampling and Analysis Plan (2015 SAP) identifies monitoring requirements (i.e., sampling and/or water level measurements) for the remaining 121 wells at the Site, based on three primary objectives:

¹ This includes twenty wells that were closely grouped in a cluster or the same borehole with a well to be retained. These wells will be abandoned in the future to avoid damaging the retained well(s), when all wells at the location are ready for abandonment.

² The 87 possible well locations appear to include old geoprobe boring locations, temporary remediation monitoring points, and shallow monitoring wells in areas of past remediation efforts that were terminated prior to 2009. Location coordinates were not available for 46 of these points. Geosyntech and TRC searched for these locations at three separate times and it is presumed that the locations were abandoned soon after installation or at the conclusion of prior remediation efforts.

- Boundary monitoring using shallow and deep sentinel wells;
- Active remediation monitoring using deep source and performance wells (including water level measurements to verify capture); and
- Plume stability monitoring using shallow and deep source and performance wells.

The 121 wells in the 2015 SAP have been reviewed regarding ongoing long-term monitoring needs and potential abandonment relative to these objectives. The most recent sampling report, *Sampling and Analysis Report, Calendar Year 2016*, was submitted on March 29, 2017 and provides a current summary of results, groundwater flow, and evaluation of concentration trends. Annual 2017 groundwater monitoring was conducted in April 2017 and those results are now available and provided in the attached summary tables herein. These results and the factors listed below, were evaluated to reach TRC's proposal for the future groundwater monitoring network of shallow and deep monitoring wells at the Site presented herein:

- **Stable to Decreasing Concentration Trends:** Most of the wells sampled under the 2015 SAP exhibit stable to decreasing concentration trends at the wells where exceedance of the groundwater screening levels occur. Only one well showed an increasing trend based on data through 2016 (i.e., MW45-03S for cis-1,2-dichloroethene), which is a beneficial result of ongoing biodegradation. Plume stability is an underlying factor in considering all wells for abandonment.
- **Water Level Needs for Deep and Shallow Wells:** Deep groundwater flow determinations are used to verify capture, but are based on a subset of the deep wells, for which water levels are measured. Shallow water level measurements and groundwater flow determinations have been consistent under the 2015 SAP, but are not needed for active remediation purposes, which is not being conducted in this zone.
- **Groundwater Use Restriction as Part of Final Remedy:** It is understood that a groundwater use restriction will be part of the final remedy for the Site. As such, the potential potable water exposure pathway for the Site is considered closed relative to proposed abandonment. The primary potential potable exposure pathway would be off property and is monitored by sentinel wells on Site.
- **Vapor Barrier as Part of the Final Remedy:** As part of Site redevelopment, a vapor intrusion barrier will be installed for all new building construction at the Site. USEPA's Vapor Intrusion Screening Level (VISL) calculator was used to determine screening levels in groundwater at a 1×10^{-5} risk level (i.e., same risk level as potable pathway) for the potential vapor intrusion exposure pathway. Exceedances occur primarily due to PCE, TCE, and VC and are located at wells between and within 200 feet of the two main streams across the central part of the Site. 111TCA is exceeded at one shallow well (SW 5-04) in this same area. 112TCA, 12DCA, and 11DCE are exceeded at one deep well (DW-32I) and 11DCE is exceeded at two other deep wells (DW 76-01 and DW-72B) in the active remediation area between the streams at the northern part of the Site. Although the drinking water maximum contaminant level (MCL) used as the screening level for 11DCE is 7 ug/L (established more than 30 years ago), the toxicity assessment of 11DCE has changed since the establishment of its MCL such that a risk-based screening level would currently be 280 ug/L, based on residential tap water. 11DCE occurs in many wells across the Site, including two above the MCL

at the boundary, but only exceeds the risk-based level at three wells located in the active remediation area of the Site.

- **Redundancy:** Given stable to decreasing concentration trends across the Site, many wells that currently exceed MCL and VISL screening levels were installed as part of the Supplemental RCRA Facility Investigation (SRFI; Geosyntech, 2009) to determine extent, but are redundant for long-term monitoring purposes and are considered for abandonment. Detected constituents of concern (COCs), sampling depths, and groundwater flow information were reviewed as part of considering redundancy.

3.0 GROUNDWATER MONITORING AND WELL REDUCTION PLAN

Proposed groundwater monitoring and well abandonment is depicted in the following figures and tables.

- Figure 1 depicts the Site location and features.

Deep Groundwater

- Figure 2 shows the 2015 SAP locations for deep groundwater including wells that are sampled and those used only for water levels. Also depicted is the interior boundary indicating the Project Cub area on the eastern part of the Site.
- Figure 3 shows the deep wells proposed for continued sampling (blue) and/or water levels (green) and those proposed for abandonment (red).
- Tables 1 and 2 provide historical results for the deep groundwater monitoring wells and the proposed status or rationale for abandonment, as warranted, considering the discussion in Section 2.0. Table 2 focuses on Project Cub area wells.
- Please note that three wells that had been used only for water levels under the 2015 SAP (DW-23, DW-26I, and DW-28D) are now proposed for ongoing sampling as part of this re-evaluation of monitoring needs associated with the active remediation system. DW-23 and DW-26I provide coverage to the west and north in place of other nearby wells. DW-28D provides vertical coverage along with DW-28I near the extraction well (DW-13).

Shallow Groundwater

- Figure 4 shows the 2015 SAP locations for shallow groundwater including wells that are sampled and those used only for water levels. Also depicted is the interior boundary indicating the Project Cub area on the eastern part of the Site.
- Figure 5 shows the shallow wells proposed for continued sampling (blue) and those proposed for abandonment (red).
- Tables 2 and 3 provide historical results for the shallow groundwater monitoring wells and the proposed status or rationale for abandonment, as warranted, considering the discussion in Section 2.0. Table 2 focuses on Project Cub area wells.

Surface Water

- Table 4 provides historical results for the surface water sampling program and the rationale for removing location STR-02.

Revised Sampling and Analysis Plan

- Table 5 summarizes the revised sampling and analysis program incorporating the proposed well abandonments.

The deep wells that will be retained have been verified to be sufficient for monitoring groundwater elevations and demonstrating the effectiveness of the NDTs. One change is proposed to the surface water sampling program, which is the elimination of surface water location STR-02, which has been dry and unable to be sampled since 2012. Sampling procedures in the 2015 SAP will remain the same. Sampling frequency³ will remain the same at the Site until conditions deem that a change in sampling frequency is justified.

Each well was evaluated regarding historical chemical data, trends, location, and usefulness in achieving the objectives of long-term monitoring given planned redevelopment of the Site (see Section 2.0). The rationale for the proposed well abandonments included review of COCs, groundwater flow, and sampling depths of nearby wells for cases in which redundant information is believed to be present.

4.0 ADDITIONAL WELL ABANDONMENTS

Based on the objectives and factors summarized in Section 2.0 and the proposed ongoing sampling program and additional well abandonments summarized in Section 3.0, seventy-one (71) of the 121 monitoring wells remaining on the Site are proposed for abandonment. TRC proposes that there be a total of 50 monitoring wells remaining at the Site consisting of 29 deep wells and 21 shallow wells. Within the Project Cub area, TRC's proposal retains 5 deep wells and 2 shallow wells. The remaining wells are believed to be sufficient to continue to fulfill monitoring objectives under the 2015 SAP (see Section 2.0).

Appendix A provides the scope of work for abandoning wells at the Site.

5.0 SUMMARY

This Groundwater Monitoring and Well Reduction Plan presents modifications to the 2015 SAP and additional wells for abandonment at the Atlantic Research Corporation RCRA Corrective Action Site in Gainesville, Virginia. This Plan considers the current conditions at the Site, the position of the Site in the corrective action process, and monitoring needs going forward to meet the monitoring objectives for the Site. It is anticipated that this plan would remain in effect until an amendment is appropriate based on the

³ Sampling frequency is semi-annual for sentinel wells and DW-13 and annual for other wells that are sampled.

performance of the NDTs, changing site conditions, and/or Site re-development activities at the Site; at which time an amendment in the form of a letter would be prepared for USEPA approval that would reference this Plan, the 2015 SAP, and follow the procedures provided in Appendix A.

6.0 REFERENCES

Geosyntec Consultants, 2009, *Draft Final SRFI Report*, Atlantic Research Corporation Facility, Gainesville, Virginia, November 2009.

Geosyntec Consultants, 2011a, *Evaluation of Potential for Off-Site Migration of Contaminants in Groundwater and Surface Water*, Atlantic Research Corporation Facility, Gainesville, Virginia, December 23, 2011.

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Geosyntec, 2012b, *Addendum to the Final Supplemental Resource Conservation Recovery Act (RCRA) Facility Investigation (SRFI) Report*, Atlantic Research Corporation Facility, Gainesville, Virginia, October 10, 2012.

Integral Consulting, Inc., 2016, *Risk Assessment Update –Analysis and Evaluation of Perchlorate Persistence in Soil and Recalculation of Homegrown Produce Risks*, Atlantic Research Corporation Facility, Gainesville, Virginia, May 31, 2016.

TRC, 2014a, *Ground Water Monitoring Technical Memorandum No. 1, 2012-2013 Monitoring Results*, Atlantic Research Corporation Facility, Gainesville, Virginia, March, 2014.

TRC, 2014b, *Ground Water Monitoring Technical Memorandum No. 2, Spring 2014 Sampling Event*, Atlantic Research Corporation Facility, Gainesville, Virginia, August 26, 2014.

TRC, 2015a, *Ground Water Monitoring Technical Memorandum No. 3, Fall 2014 Sampling Event*, Atlantic Research Corporation Facility, Gainesville, Virginia, March 6, 2015.

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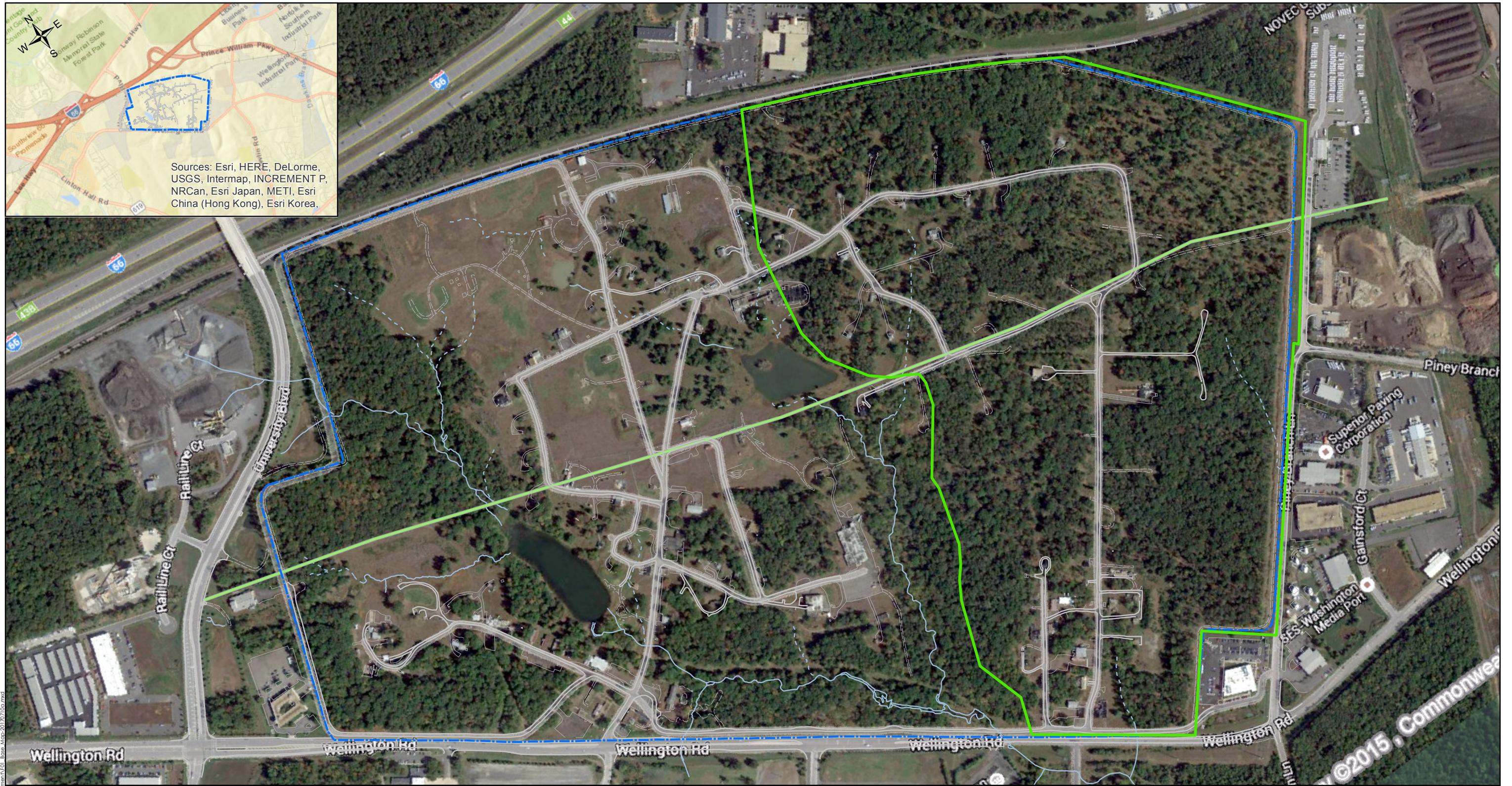
TRC, 2016, *Sampling and Analysis Report, Calendar Year 2015*, Atlantic Research Corporation Facility, Gainesville, Virginia, March 8, 2016.

TRC, 2017, *Sampling and Analysis Report, Calendar Year 2016*, Atlantic Research Corporation Facility, Gainesville, Virginia, March 29, 2017.

USEPA, 2015, *Approval Letter for TRC Sampling and Analysis Plan*, Atlantic Research Corporation Facility, Gainesville, Virginia, July 22, 2015.

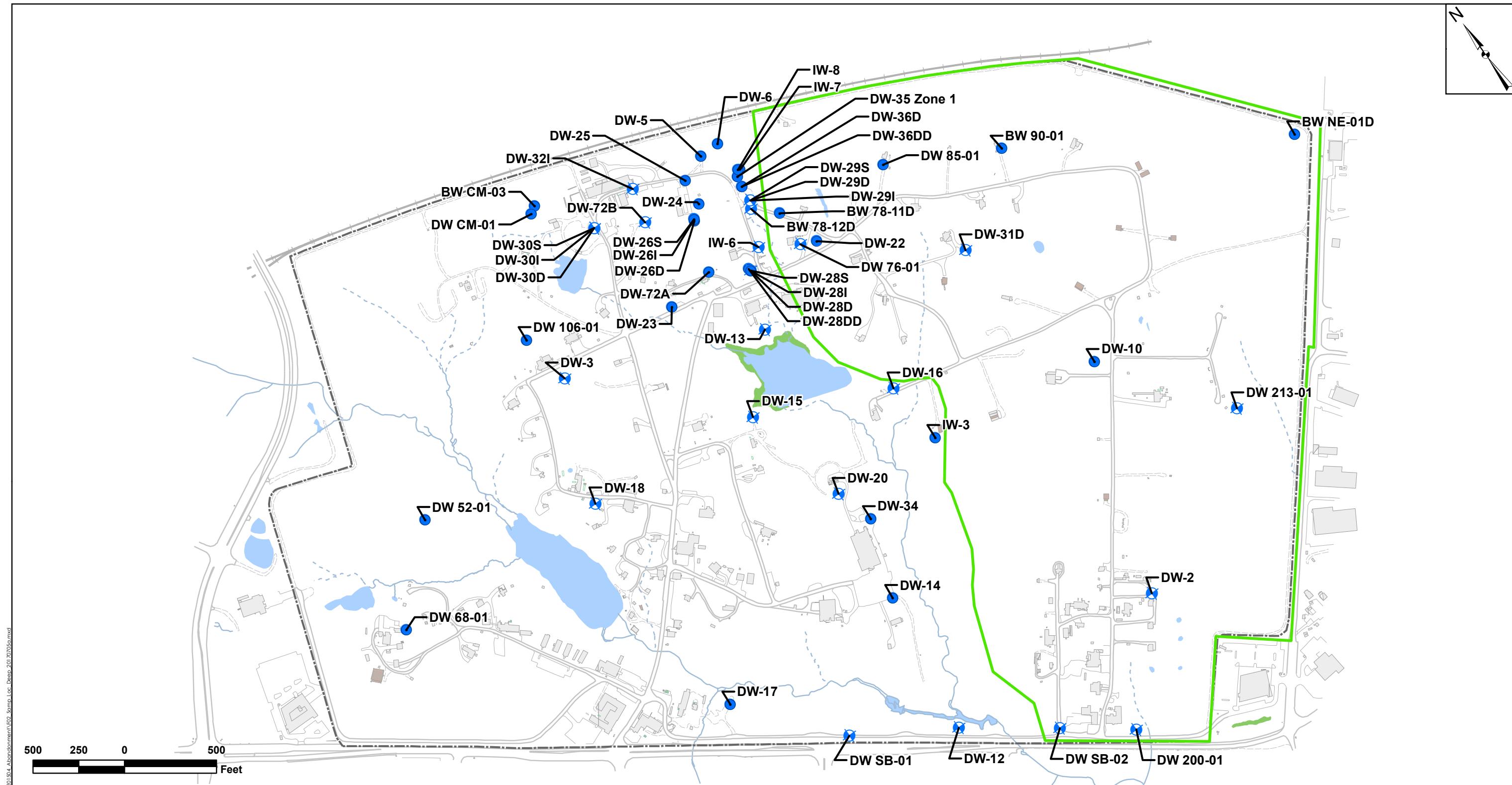
USEPA, 2016, *Approval Letter for Human Health Risk Assessment*, Atlantic Research Corporation Facility, Gainesville, Virginia, July 22, 2015.

FIGURES



GVS Project GIS - GVS-A-004-AbsorbsomeN010 Base Map-20170710.mxd

Site Location and Features		Figure 1
Atlantic Research Corporation, Gainesville, Virginia		
 TRC Environmental Inc. 11231 Cornell Park Drive Cincinnati, Ohio 45242	Project: 229931.0000	7/12/2017



V:\\nra\\Data\\Projects\\SEQAN-Gainesville\\MD\\201504_Abandoned\\N02_Samp_Loc_Deep\\201705\\Survey\\06292017\\Survey\\06292017.survey.pdf

Legend

- 2015 Sampling Plan (VOC and Perchlorate)
- Not sampled recently. Maintained and/or used for water wells since 2015 or earlier.
- Approximate Project Cub Boundary (based on 06292017 survey pdf)

Site Features

- Site Boundary
- Paved Road
- Unpaved Road
- Pavement
- Parking
- Railroad Track
- Tank
- Building
- Former Building
- Perennial Surface Water
- Ephemeral Surface Water
- Wetland
- Pond

Note:

Due to the wells being clustered closely together, some wells are shown with one symbol. See tables for details of status for these wells.

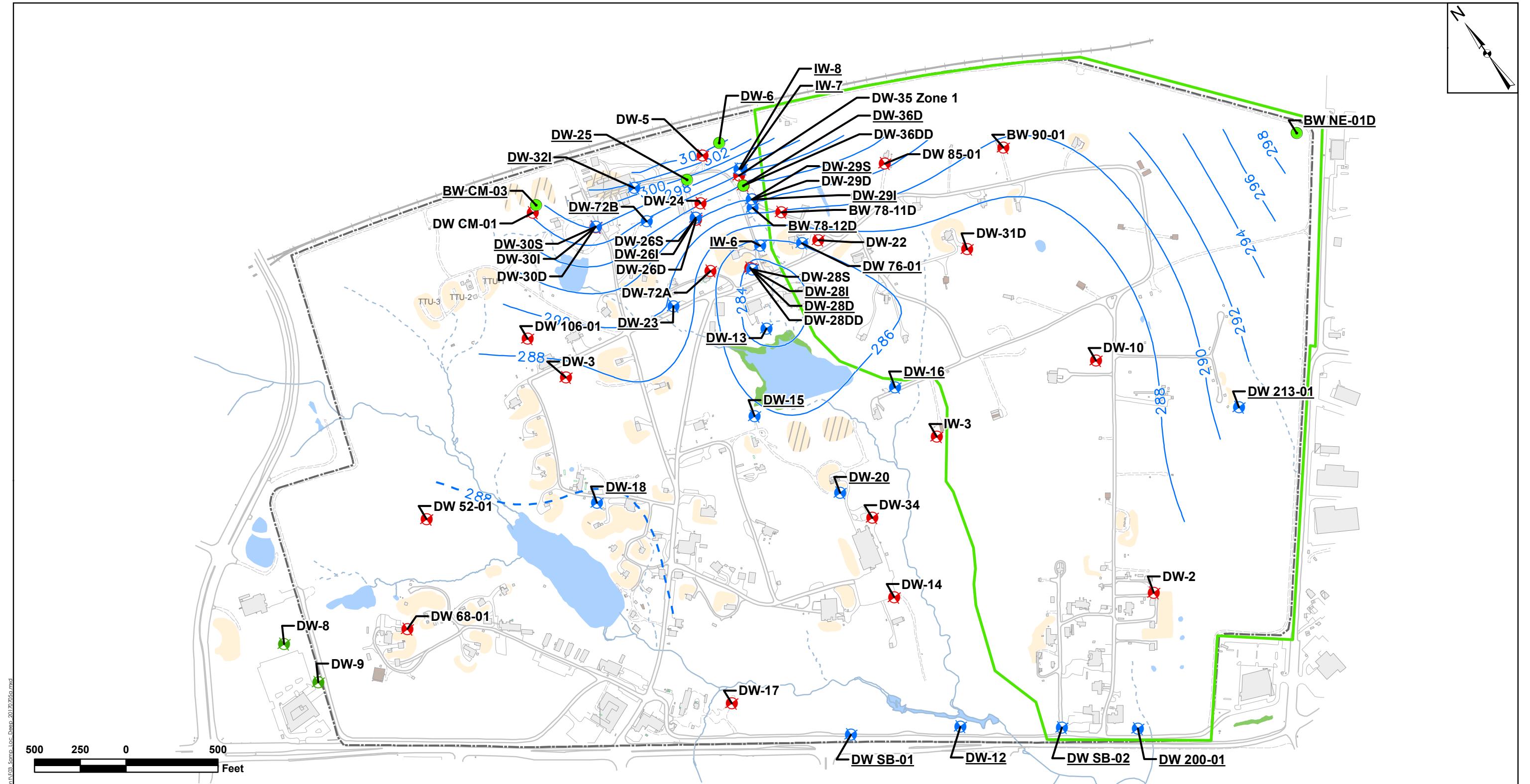
Sampling Locations - 2015 Plan - Deep
Atlantic Research Corporation, Gainesville, Virginia

 TRC Environmental Inc.
11231 Cornell Park Drive
Cincinnati, Ohio 45242

Project: 229931.0000-03

7/6/2017

Figure
2



Legend

- Retain and Sample
- Retain for Water Levels
- Abandon
- Off-Site Wells To Be Abandoned
- Approximate Project Cub Boundary (based on 06292017 survey pdf)

Site Features

- Site Boundary
- Paved Road
- Unpaved Road
- Pavement
- Parking
- Railroad Track
- Tank

— Water Level Contour

- - - Water Level Contour (Approximate)

Notes:

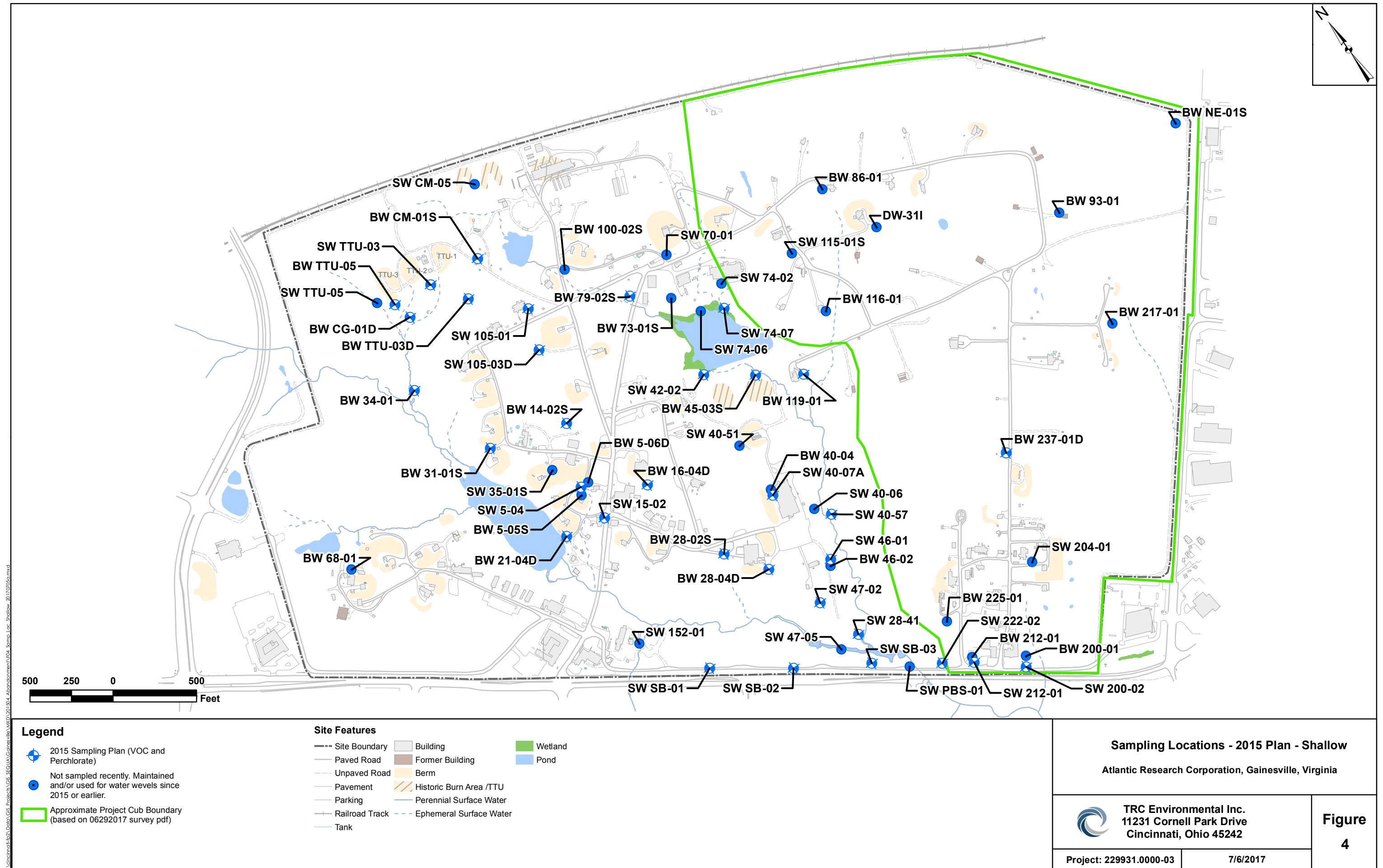
Water Level Contours from 2016 Sampling and Analysis Report Figure 2 (March 29, 2017).
 Water levels gauged March 28-29, 2016.
 NDTs pump at DW-13 was currently active and pumping.
 NM = Not Measured
 Artesian Wells indicate that water level is greater than the top of casing.
 Groundwater Elevations in Feet above mean sea level

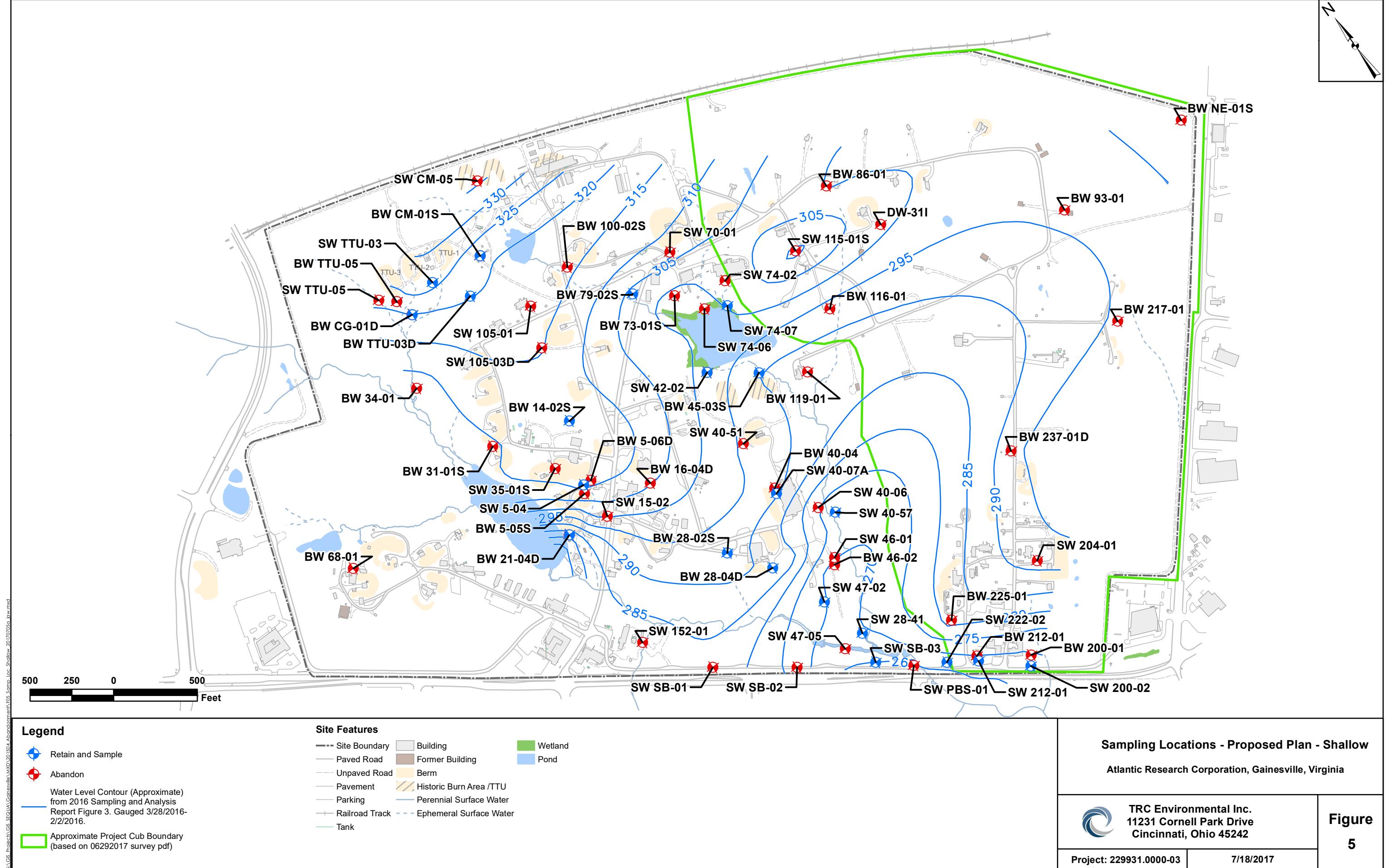
Due to the wells being clustered closely together, some wells are shown with one symbol. See tables for details of status for these wells. Wells to be retained have label underlined.

Sampling Locations - Proposed Plan - Deep
 Atlantic Research Corporation, Gainesville, Virginia

TRC Environmental Inc.
 11231 Cornell Park Drive
 Cincinnati, Ohio 45242

Figure
3





TABLES

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	BW 78-12D	3/3/2005	GW	1380												Retain and Sample	14
Deep	BW 78-12D	5/11/2006	GW	62000													
Deep	BW 78-12D	11/16/2006	GW	27000													
Deep	BW 78-12D	10/4/2007	GW	250000	0.8 U	0.8 U	1 U	1 U	5	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	BW 78-12D	6/5/2008	GW	13000	5 UJ	5 UJ	5 UJ	5 UJ	1.1 J	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	BW 78-12D	10/13/2009	GW	32000	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	BW 78-12D	3/30/2010	GW	7200	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	BW 78-12D	9/7/2011	GW	13000													
Deep	BW 78-12D	5/14/2012	GW	5700													
Deep	BW 78-12D	5/22/2013	GW	28000													
Deep	BW 78-12D	5/15/2014	GW	40000													
Deep	BW 78-12D	5/14/2015	GW	17000	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 J	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	BW 78-12D	4/1/2016	GW	21000	0.5 U	0.5 U	0.5 U	0.5 U	2	0.8 J	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	BW 78-12D	4/20/2017	GW	16000	0.5 U	0.5 U	0.5 U	0.5 U	0.7 J	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	BW CM-03	8/20/2008	GW	48 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Retain for Water levels: exceeded SL for perchlorate only, when last sampled in 2014, with stable to decreasing trend	50
Deep	BW CM-03	8/5/2009	GW	41	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	BW CM-03	3/24/2010	GW	41	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	BW CM-03	3/24/2010	GW	40	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	BW CM-03	9/12/2011	GW	58													
Deep	BW CM-03	4/2/2012	GW	26													
Deep	BW CM-03	5/30/2013	GW	32	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	BW CM-03	5/15/2014	GW	34													
Deep	DW SB-01	9/4/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Retain and Sample - Sentinel Well	Artesian
Deep	DW SB-01	3/24/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-01	9/1/2011	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.056 UJ	0.5 U		
Deep	DW SB-01	5/7/2012	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW SB-01	5/7/2012	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW SB-01	5/28/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.14 j	0.5 U		
Deep	DW SB-01	11/18/2013	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-01	5/19/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11	0.5 U	
Deep	DW SB-01	5/13/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW SB-01	11/6/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW SB-01	3/29/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW SB-01	10/27/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW SB-01	10/27/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW SB-01	4/18/2017	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW-6	6/4/2008	GW	6.2												Retain for Water Levels - below SLs for >3 years	110
Deep	DW-6	10/19/2009	GW	7.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-6	3/19/2010	GW	7.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-6	9/6/2011	GW		0.8 U	0.8 U	2 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-6	5/13/2014	GW		0.5 U	0.5 U	2	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U		

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):			15	200	5	140	5	7	5	5	70	2	7.8	5	
					(ft)												
Deep	DW-12	5/16/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Deep	DW-12	11/5/2002	GW		1 U	1 U	1 U	1 U	1.6	1 U	1 U	1 U	1 U	1 U	1 U		
Deep	DW-12	2/13/2003	GW		1 UJ	1 UJ	1 UJ	1 UJ	2.2 J	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ		
Deep	DW-12	5/21/2003	GW	4 U	1 U	1 U	1 U	1 U	2.3	4.1	1 U	1 U	1 U	1 U	1 U		
Deep	DW-12	5/21/2003	GW	2 U													
Deep	DW-12	11/22/2003	GW	4 U	1 U	1 U	1	1 U	3.3	1	1 U	1 U	1 U	1 U	1 U		
Deep	DW-12	3/25/2004	GW	2.6 U	0.8 U	0.8 U	1 J	1 U	4 J	2 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	5/9/2005	GW	0.7 U	0.8 U	0.8 U	2 J	1 U	5	2 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	11/22/2005	GW	2.3 J	0.8 U	0.8 U	2 J	1 U	7	2 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	5/10/2006	GW	6	0.8 U	0.8 U	2 J	1 U	10	2 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	11/16/2006	GW	2 U	0.8 U	0.8 U	1 J	1 U	7	1 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	9/28/2007	GW	0.2 U	0.8 U	0.8 U	3 J	1 U	12	2 J	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	
Deep	DW-12	5/13/2008	GW	1 U	5 UJ	5 UJ	2 J	5 UJ	7.2 J	1.6 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	
Deep	DW-12	10/5/2009	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	7	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	11/24/2009	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	8	1 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	2/3/2010	GW	2 U	0.8 U	0.8 U	2 J	1 U	8	1 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	4/7/2010	GW	2 U	0.8 U	0.8 U	2 J	1 U	7	1 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	6/16/2010	GW	2 U	0.8 U	0.8 U	2 J	1 U	7	1 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	8/10/2010	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	7	0.8 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	11/10/2010	GW		0.8 U	0.8 U	2 J	1 U	7	1 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	4/5/2011	GW		0.8 U	0.8 U	2 J	1 U	7	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	9/1/2011	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	8	0.8 J	1 U	0.8 U	1 U	0.11 J	0.5 U		
Deep	DW-12	12/12/2011	GW		0.8 U	0.8 U	2 J	1 U	7	0.8 U	1 U	0.8 U	1 U	0.5 U			
Deep	DW-12	5/1/2012	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	8	0.8 U	1 U	0.8 U	1 U	0.5 U			
Deep	DW-12	11/7/2012	GW		0.8 U	0.8 U	2 J	1 U	8	0.8 U	1 U	0.8 U	1 U	0.5 U			
Deep	DW-12	5/21/2013	GW	1 U	0.8 U	0.8 U	2 Jj	1 U	7 j	0.8 U	1 U	0.8 U	1 U	0.18 j	0.5 U		
Deep	DW-12	11/18/2013	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	7	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-12	5/18/2014	GW	1 U	0.5 U	0.5 U	2	0.5 U	7	0.7 J	0.5 U	0.5 U	0.5 U	0.18	0.5 U		
Deep	DW-12	5/18/2014	GW	1 U	0.5 U	0.5 U	2	0.5 U	7	0.7 J	0.5 U	0.5 U	0.5 U	0.18	0.5 U		
Deep	DW-12	11/11/2014	GW		0.5 U	0.5 U	2	0.5 U	6	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Deep	DW-12	5/12/2015	GW	0.2 U	0.5 U	0.5 U	2	0.5 U	7	0.6 J	0.5 U	0.5 U	0.5 U	0.26 u	0.5 U		
Deep	DW-12	11/5/2015	GW	0.2 U	0.5 U	0.5 U	3	0.5 U	11	1	0.6 J	0.5 U	0.5 U	0.5 U	0.5 U		
Deep	DW-12	3/30/2016	GW	0.2 U	0.5 U	0.5 U	3	0.5 U	10	1	0.5 J	0.5 U	0.5 U	0.5 U	0.28	0.5 U	
Deep	DW-12	10/26/2016	GW	0.2 U	0.5 U	0.5 U	3	0.5 U	9	1 J	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U		
Deep	DW-12	4/18/2017	GW	0.2 U	0.5 U	0.5 U	2	0.5 U	7	0.8 J	0.5 U	0.5 U	0.5 U	0.2	0.5 U		
Deep	DW-13	11/19/2002	GW		190	1 U	12.6	1 U	155	192	1 U	1 U	1 U				
Deep	DW-13	5/7/2003	GW											7.9			
Deep	DW-13	6/11/2003	GW	2230													
Deep	DW-13	2/18/2004	GW	1880	270	0.8 U	20	1 U	290	85	1 J	0.8 U	1 U			0.5 U	
Deep	DW-13	4/6/2004	GW	1490	260	0.8 U	20	1 U	300	110	1 U	0.8 U	1 U			0.5 U	
Deep	DW-13	4/20/2004	GW											4 J			
Deep	DW-13	5/13/2004	GW	1740	370	0.8 U	21	1 U	450	150	1 J	0.8 U	1 U			0.5 U	
Deep	DW-13	7/15/2004	GW	10700	400	0.8 U	34	1 U	430	230	1 J	0.8 U	1 U			0.5 U	
Deep	DW-13	8/19/2004	GW	7160	310	0.8 U	23	1 U	360	140	1 U	0.8 U	1 U			0.5 U	
Deep	DW-13	9/13/2004	GW	6780	280	0.8 U	22	1 U	220	120	1 J	0.8 U	1 U			0.5 U	
Deep	DW-13	10/25/2004	GW	6170	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Deep	DW-13	11/10/2004	GW	7530	230	0.8 U	19	1 U	280	100	1 U	0.8 U	1 U			0.5 U	

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-13	12/14/2004	GW	7120	340	0.8 U	30	1 U	400	170	2 J	0.8 U	1 U		0.5 U		
Deep	DW-13	1/13/2005	GW	6940	260	0.8 U	23	1 U	310	160	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	2/16/2005	GW	4750	300	0.8 U	22	1 U	290	130	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	3/17/2005	GW	4120	300	0.8 U	19	1 U	270	110	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	4/14/2005	GW	4160	230	0.8 U	22	1 U	240	110	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	5/10/2005	GW	4020	260	0.8 U	20	1 U	290	85	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	6/18/2005	GW		280	0.8 U	23	1 U	300	130	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	7/25/2005	GW		220	0.8 U	18	1 U	240	98	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	9/21/2005	GW		460	0.8 J	38	1 U	510	50	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	10/26/2005	GW	5000	200	0.8 U	16	1 U	270	78	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	11/29/2005	GW	6600	370	0.8 U	29	1 U	410	72	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	12/13/2005	GW	5000	260	0.8 U	19	1 U	240	100	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	1/3/2006	GW	3500	240	0.8 U	19	1 U	270	88	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	2/15/2006	GW	1300	110	0.8 U	13	1 U	200	68	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	3/6/2006	GW	2200	87	0.8 U	12	1 U	120	62	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	4/25/2006	GW	2200	110	0.8 U	13	1 U	190	59	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	5/12/2006	GW	4100	110	0.8 U	14	1 U	180	71	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	7/31/2006	GW	8700	170	0.8 U	18	1 U	290	110	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	8/16/2006	GW	4600	140	0.8 U	16	1 U	230	75	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	9/21/2006	GW	4200	130	0.8 U	15	1 U	270	80	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	10/26/2006	GW	5800	150	0.8 U	18	1 U	280	87	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	11/13/2006	GW	3800	120	0.8 U	13	1 U	230	88	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	4/20/2007	GW	14000	180	0.8 U	19	1 U	230	130	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	5/2/2007	GW	8900	160	0.8 U	17	1 U	250	97	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	5/16/2007	GW	4700	130	0.8 U	14	1 U	260	82	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	6/5/2007	GW	4500	110	0.8 U	13	1 U	280	74	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	6/12/2007	GW	3800	140	0.8 U	15	1 U	290	79	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	6/26/2007	GW	5000	150 J	0.8 UJ	16 J	1 UJ	210 J	95 J	1 J	0.8 UJ	1 UJ		0.5 UJ		
Deep	DW-13	7/13/2007	GW	4200	110	0.8 U	13	1 U	250	66	1 U	0.8 U	1 U		0.5 U		
Deep	DW-13	7/24/2007	GW	4100	110 R	0.8 UR	14 R	1 UR	220 R	60 R	1 UR	0.8 UR	1 UR		0.5 UR		
Deep	DW-13	8/7/2007	GW	4600	110 R	0.8 UR	14 R	1 UR	230 R	69 R	1 R	0.8 UR	1 UR		0.5 UR		
Deep	DW-13	9/19/2007	GW	4400	110	0.8 U	14	1 U	230	72	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	10/4/2007	GW	5800	150	0.8 U	14	1 U	240	73	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	10/15/2007	GW	12000	300	0.8 U	36	1 U	550	100	2 J	0.8 U	1 U		0.5 U		
Deep	DW-13	11/1/2007	GW	13000	260 J	0.8 U	32	1 U	440	85	2 J	0.8 U	1 U		0.5 U		
Deep	DW-13	11/14/2007	GW	9200	240	0.8 U	25	1 U	430	88	2 J	0.8 U	1 U		0.5 U		
Deep	DW-13	11/27/2007	GW	7100	180	0.8 U	20	1 U	280	85	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	12/11/2007	GW	5900	110	0.8 U	14	1 U	250	63	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	12/28/2007	GW	16000	240	0.8 U	23	1 U	350	83	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	1/9/2008	GW	6200	120	0.8 U	16	1 U	240	62	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-13	2/7/2008	GW	4400	100	0.8 U	14	1 U	240	70	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	3/4/2008	GW	7400	170	0.8 U	19	1 U	300	98	2 J	0.8 U	1 U		0.5 U		
Deep	DW-13	3/18/2008	GW	9900	230	0.8 U	25	1 U	350	110	2 J	0.8 J	1 U		0.5 U		
Deep	DW-13	4/3/2008	GW	3000	140	0.8 U	15	1 U	290	88	1 J	0.8 U	1 U		0.5 U		
Deep	DW-13	4/17/2008	GW	8000	110	0.8 U	15	1 U	270	88	2 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-13	5/1/2008	GW	2600	110 J	0.8 UJ	16 J	1 UJ	240 J	74 J	1 J	0.8 UJ	1 UJ		0.5 UJ		
Deep	DW-13	5/15/2008	GW	4400	100 J	50 UJ	50 UJ	50 UJ	170 J	70 J	50 UJ	50 UJ	50 UJ		50 UJ		

Retain and Sample -
Extraction Well
(cont.)

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-13	5/28/2008	GW	4000	85 J	50 UJ	12 J	50 UJ	180 J	67 J	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ		
Deep	DW-13	6/11/2008	GW	4300	84 J	50 UJ	12 J	50 UJ	200 J	67 J	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ		
Deep	DW-13	6/26/2008	GW	5400 J	98	0.8 U	14	1 U	250	75	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	7/10/2008	GW	4700	95	0.8 U	14	1 U	260	63	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	7/24/2008	GW	23000	170	0.8 U	21	1 U	310	88	3 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	8/7/2008	GW	7200	90	0.8 U	14	1 U	210	69	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	8/21/2008	GW	23000	180 J	0.8 UJ	23 J	1 UJ	190 J	77 J	2 J	0.8 UJ	1 UJ	70 UJ	0.5 UJ		
Deep	DW-13	9/4/2008	GW	13000	230	0.8 U	26	1 U	310	78	3 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-13	9/18/2008	GW	8800	200	0.8 U	26	1 U	360	110	3 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-13	9/30/2008	GW	10000	110	0.8 U	16	1 U	260	76	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	10/15/2008	GW	4400	95 J	0.8 UJ	17 J	1 UJ	250 J	58 J	2 J	0.8 UJ	1 J	70 UJ	0.5 UJ		
Deep	DW-13	10/30/2008	GW	5800	99	0.8 U	18	1 U	240	67	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	11/12/2008	GW	5200	86	0.8 U	16	1 U	210	55	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	11/25/2008	GW	5000	99	0.8 U	17	1 U	220	63	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	12/10/2008	GW	5600	84	0.8 U	17	1 U	220	58	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	12/23/2008	GW	5000	89	0.8 U	18	1 U	210	58	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	1/8/2009	GW	9700	85	0.8 U	18	1 U	220	58	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	1/22/2009	GW	10000	180	0.8 U	27	1 U	300	100	3 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	2/17/2009	GW	9900 J	160	0.8 U	23	1 U	300	74	3 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-13	3/6/2009	GW	4800	89	0.8 U	15	1 U	230	72	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	3/18/2009	GW	7600	89	0.8 U	19	1 U	260	72	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	4/3/2009	GW	5400	97	0.8 U	21	1 U	270	64	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	4/16/2009	GW	4800	86	0.8 U	19	1 U	260	74	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	4/29/2009	GW	4900	89	0.8 U	20	1 U	270	76	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	5/12/2009	GW	4500	86	0.8 U	19	1 U	270	68	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	5/27/2009	GW	4100	91	0.8 U	20	1 U	270 J	73	2 J	0.8 U	1 J	70 U	0.5 U		
Deep	DW-13	9/25/2009	GW	4100	66	0.8 U	19	1 U	270	46	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	10/27/2009	GW	4200	72	0.8 U	23	1 U	230	38	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	11/24/2009	GW	4000	82	0.8 U	26	1 U	270	43	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	1/5/2010	GW	28000	68	0.8 U	26	1 U	240	46	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	2/3/2010	GW	3900	85	0.8 U	29	1 U	250	43	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	2/3/2010	GW	3200	86	0.8 U	29	1 U	250	43	2 J	0.8 U	3 J	70 U	0.5 U		
Deep	DW-13	3/1/2010	GW	3400	74	0.8 U	27	1 U	250	49	2 J	0.8 U	2 J	70 U	0.5 U		
Deep	DW-13	4/7/2010	GW	4500 J	75	0.8 U	29	1 U	250	47	2 J	0.8 U	3 J	150 J	0.5 U		
Deep	DW-13	4/7/2010	GW	3300 J	75	0.8 U	29	1 U	260	47	2 J	0.8 U	3 J	70 U	0.5 U		
Deep	DW-13	6/16/2010	GW	4200	69	0.8 U	30	1 U	260	43	3 J	0.8 U	4 J	70 U	0.5 U		
Deep	DW-13	8/10/2010	GW	3900	70	0.8 U	33	1 U	250	36	2 J	0.8 U	6	70 U	0.5 U		
Deep	DW-13	10/7/2010	GW	3500	91	0.8 U	36	1 U	240	32	3 J	0.8 U	9	70 U	0.5 U		
Deep	DW-13	10/7/2010	GW	3600	91	0.8 U	37	1 U	250	33	3 J	0.8 U	9	70 U	0.5 U		
Deep	DW-13	12/6/2010	GW	2800	64	0.8 U	35	1 U	210	34	3 J	0.8 U	7	70 U	0.5 U		
Deep	DW-13	2/3/2011	GW	3900 J	76	0.8 U	37	1 U	210	33	3 J	0.8 U	7	70 U	0.5 U		
Deep	DW-13	6/8/2011	GW	3000	60	0.8 U	40	1 U	170	37	3 J	0.8 U	6	70 U	0.5 U		
Deep	DW-13	9/14/2011	GW	3000	52	0.8 U	36	1 U	130	28	3 J	0.8 U	4 J	3.9 J	0.5 U		
Deep	DW-13	12/14/2011	GW	6900	62	0.8 U	44	1 U	160	32	3 J	0.8 U	6		0.5 U		
Deep	DW-13	2/27/2012	GW	2400	66	0.8 U	38	1 U	150	27	3 J	0.8 U	4 J	70 U	0.5 U		
Deep	DW-13	2/27/2012	GW	2600	69	0.8 U	40	1 U	160	27	3 J	0.8 U	5 J	70 U	0.5 U		
Deep	DW-13	5/9/2012	GW	2300	50	0.8 U	38	1 U	150	26	2 J	0.8 U	4 J	0.5 U			

Retain and Sample -
Extraction Well
(cont.)

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-13	5/9/2012	GW	1700	56	0.8 U	42	1 U	160	27	2 J	0.8 U	4 J		0.5 U		
Deep	DW-13	8/16/2012	GW	3000	51	0.8 U	42	1 U	130	24	3 J	0.8 U	3 J		0.5 U		
Deep	DW-13	8/16/2012	GW	2400	56	0.8 U	43	1 U	150	28	3 J	0.8 U	3 J		0.5 U		
Deep	DW-13	11/6/2012	GW	500	100	0.8 U	33	1 U	230	47	2 J	0.8 U	3 J		0.5 U		
Deep	DW-13	11/6/2012	GW	550	100	0.8 U	36	1 U	250	43	2 J	0.8 U	3 J		0.5 U		
Deep	DW-13	5/28/2013	GW	1900	57	0.8 U	46	1 U	150	34	3 J	0.8 U	3 J	7.3	0.5 U	Retain and Sample - Extraction Well	
Deep	DW-13	4/9/2014	GW	1500	58	0.5 U	42	0.5 U	110	42	2	0.6 J	2	70 U	0.5 U	Sample Port	
Deep	DW-13	5/27/2014	GW	4500	42	0.5 U	35	0.5 U	100	28	2	0.5 U	2	70 U	0.5 U		
Deep	DW-13	12/4/2014	GW	1900	68	0.5 U	41	0.5 U	130	30	2	1 J	3	70 U	0.5 U		
Deep	DW-13	5/11/2015	GW	1600	41	0.5 U	38	0.5 U	100	30	2	1	2	6.4	0.5 U		
Deep	DW-13	11/5/2015	GW	1200	40	0.5 U	37	0.5 U	110	25	1	1	2	6.1	0.5 U		
Deep	DW-13	3/28/2016	GW	1500	41	0.5 U	29	0.5 U	100	4	2	0.8 J	2	6.8	0.5 U		
Deep	DW-13	10/26/2016	GW	970	42	0.5 U	32	0.5 U	120	7	2	1	2	4.4 j	0.5 U		
Deep	DW-13	4/17/2017	GW	800	28	0.5 U	27	0.5 U	80	6	2	0.9 J	2	4.3	0.5 U		
Deep	DW-15	5/22/2003	GW	6350	6.9	1 U	2.1	1 U	22	16.4	1 U	1.4	1 U				
Deep	DW-15	4/8/2004	GW	1110	7	0.8 U	4 J	1 U	20	10	1 J	2 J	1 U		0.5 U		
Deep	DW-15	5/12/2004	GW	1250	7	0.8 U	4 J	1 U	20	9	1 U	1 J	1 U		0.5 U		
Deep	DW-15	8/18/2004	GW	821	5 J	0.8 U	3 J	1 U	14	5 J	1 U	0.9 J	1 U		0.5 U		
Deep	DW-15	11/10/2004	GW	1270	13	0.8 U	6	1 U	44	20	1 U	1 J	1 U		0.5 U		
Deep	DW-15	2/15/2005	GW	0.7 U	6	0.8 U	4 J	1 U	21	5 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-15	5/9/2005	GW	0.7 U	2 J	0.8 U	6	1 U	17	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-15	5/9/2006	GW	0.37 J	0.8 U	0.8 U	4 J	1 U	8	2 J	2 J	0.8 U	1 U		0.5 U		
Deep	DW-15	2/20/2007	GW	4.4	0.8 U	0.8 U	4 J	1 U	8	1 J	1 U	0.8 U	1 J		0.5 U		
Deep	DW-15	10/14/2009	GW	0.3 J	0.8 U	0.8 U	3 J	1 U	6	0.8 U	3 J	1 J	3 J	70 U	0.5 U		
Deep	DW-15	3/17/2010	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	7	0.8 U	4 J	1 J	2 J	70 U	0.5 U		
Deep	DW-15	3/17/2010	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	8	0.8 U	4 J	2 J	2 J	70 U	0.5 U		
Deep	DW-15	8/30/2011	GW		0.8 U	0.8 U	7	1 U	5 J	0.8 U	3 J	0.9 J	8		0.5 U		
Deep	DW-15	5/3/2012	GW		0.8 U	0.8 U	6	1 U	12	0.8 U	4 J	1 J	7		0.5 U		
Deep	DW-15	11/7/2012	GW		0.8 U	0.8 U	4 J	1 U	4 J	0.8 U	2 J	3 J	6		0.5 U		
Deep	DW-15	5/21/2013	GW	1 U	0.8 U	0.8 U	6	1 U	8	0.8 U	3 J	1 J	6		0.5 U		
Deep	DW-15	5/31/2013	GW											2 j			
Deep	DW-15	11/20/2013	GW		0.8 U	0.8 U	1 J	1 U	2 J	0.8 U	2 J	2 J	3 J	70 U	0.5 U		
Deep	DW-15	5/14/2014	GW		0.5 U	0.5 U	1	0.5 U	2	0.5 U	2	0.7 J	2		0.5 U		
Deep	DW-15	5/14/2015	GW	0.2 U	0.5 U	0.5 U	8	0.5 U	16	0.5 U	4	2	9		0.5 U		
Deep	DW-15	3/30/2016	GW	0.2 U	0.5 U	0.5 U	9	0.5 U	17	0.5 U	4	1	9		0.5 U		
Deep	DW-15	4/18/2017	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	2		0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):			15	200	5	140	5	7	5	5	70	2	7.8	5	
																	(ft)
Deep	DW-16	11/12/2002	GW		1 U	1 U	1 U	1 U	2.4	1 U	1 U	1 U	1 U	1 U	1 U		
Deep	DW-16	11/12/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Deep	DW-16	5/22/2003	GW	8230	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Deep	DW-16	5/22/2003	GW	8524													
Deep	DW-16	4/23/2004	GW	204	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	1 U	0.5 U	
Deep	DW-16	4/23/2004	GW	858													
Deep	DW-16	5/12/2004	GW	372	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	1 U	0.5 U	
Deep	DW-16	5/12/2004	GW	716													
Deep	DW-16	8/19/2004	GW	275	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	1 U	0.5 U	
Deep	DW-16	9/1/2004	GW	250													
Deep	DW-16	9/1/2004	GW	242													
Deep	DW-16	11/11/2004	GW	273	1 J	0.8 U	1 U	1 U	2 J	7	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	2/15/2005	GW	188	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	5/9/2005	GW	180	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	5/9/2006	GW	720	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	2/19/2007	GW	190													
Deep	DW-16	9/28/2007	GW	230	1 J	0.8 U	1 U	1 U	6	1 J	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	9/28/2007	GW	230	1 J	0.8 U	1 U	1 U	6	1 J	1 U	0.8 U	1 U	1 U	0.5 U		
Deep	DW-16	5/13/2008	GW	170	5 UJ	5 UJ	5 UJ	5 UJ	2.3 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		
Deep	DW-16	3/17/2010	GW	46 J	0.8 U	0.8 U	11	1 U	40	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-16	8/30/2011	GW	21	0.8 U	0.8 U	26	1 U	36	0.8 U	1 U	0.8 U	4 J		0.5 U		
Deep	DW-16	12/12/2011	GW		0.8 U	0.8 U	33	1 U	33	0.8 U	1 U	0.8 U	4 J		0.5 U		
Deep	DW-16	5/2/2012	GW		0.8 U	0.8 U	15	1 U	18	0.8 U	1 U	0.8 U	2 J		0.5 U		
Deep	DW-16	11/7/2012	GW		0.8 U	0.8 U	14	1 U	20	0.8 U	1 U	0.8 U	1 J		0.5 U		
Deep	DW-16	5/22/2013	GW	7.6 j	0.8 U	0.8 U	19 j	1 U	15 j	0.8 U	1 U	0.8 U	1 Jj	1.5 j	0.5 U		
Deep	DW-16	11/20/2013	GW	3	0.8 U	0.8 U	17	1 U	18	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-16	5/14/2014	GW		0.5 U	0.5 U	16	0.5 U	16	0.5 U	0.5 U	0.5 U	1		0.5 U		
Deep	DW-16	11/11/2014	GW		0.5 U	0.5 U	17	0.5 U	13	0.5 U	0.5 U	0.5 U	1		0.5 U		
Deep	DW-16	5/15/2015	GW	2	0.5 U	0.5 U	18	0.5 U	12	0.5 U	0.5 U	0.5 U	1		0.5 U		
Deep	DW-16	3/30/2016	GW	3.2	0.5 U	0.5 U	18	0.5 U	11	0.5 U	0.5 U	0.5 U	0.9 J		0.5 U		
Deep	DW-16	4/18/2017	GW	0.2 U	0.5 U	0.5 U	11	0.5 U	5	0.5 U	0.5 U	0.5 U	0.5 J		0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
					15	200	5	140	5	7	5	5	70	2	7.8	5	
																	(ft)
Screening Levels (SLs):																	
Deep	DW-18	8/21/2002	GW		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		
Deep	DW-18	8/21/2002	GW		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		
Deep	DW-18	9/18/2002	GW		1 U	1 U	1 U	1 U	1 U	57	18	1 U	1 U	1 U	1 U		
Deep	DW-18	5/21/2003	GW	2 U	1 U	1 U	1 U	1 U	1 U	1.9	1 U	1 U	1 U	1 U	1 U		
Deep	DW-18	5/21/2003	GW	4 U													
Deep	DW-18	4/6/2004	GW	97.7	0.8 U	0.8 U	1 U	1 U	3 J	12	1 U	0.8 U	1 U		0.5 U		
Deep	DW-18	4/20/2004	GW												1 U		
Deep	DW-18	2/19/2007	GW	140	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	2 J	0.8 U	1 U		0.5 U		
Deep	DW-18	8/31/2011	GW	0.2 U	0.8 U	0.8 U	6	1 U	11	0.8 U	18	6	1 U		0.5 U		
Deep	DW-18	12/12/2011	GW	0.2 U													
Deep	DW-18	5/3/2012	GW	0.2 U	0.8 U	0.8 U	11	1 U	19	0.8 U	29	16	1 U		0.5 U		
Deep	DW-18	5/22/2013	GW	1 U	0.8 U	0.8 U	10 j	1 U	17 j	0.8 U	28 j	19 j	1 U	1.4 j	0.5 U		
Deep	DW-18	5/14/2014	GW	1 U	0.5 U	0.5 U	13	0.5 U	25	0.5 U	29	29	0.5 U		0.5 U		
Deep	DW-18	11/11/2014	GW	1 U													
Deep	DW-18	5/15/2015	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	2	0.5 U	4	2	0.5 U		0.5 U		
Deep	DW-18	3/31/2016	GW	0.2 U	0.5 U	0.5 U	11	0.5 U	22	0.5 U	29	24	0.5 U		0.5 U		
Deep	DW-18	4/19/2017	GW	0.2 U	0.5 U	0.5 U	12	0.5 U	20	0.9 J	28	23	0.5 U		0.5 U		
Deep	DW-20	8/22/2002	GW		5 U	5 U	1 E	5 U	9	3 E	5 U	5 U	5 U		5 U		
Deep	DW-20	9/18/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			
Deep	DW-20	11/14/2002	GW		1 U	1 U	2.6	1 U	12.7	4.3	1 U	1 U	1 U	1 U			
Deep	DW-20	11/14/2002	GW		1 U	1 U	1 U	1 U	6.2	3.7	1 U	1 U	1 U	1 U			
Deep	DW-20	5/22/2003	GW	211	1 U	1 U	7.8	1 U	15.5	30.3	2.3	3.2	1				
Deep	DW-20	4/22/2004	GW	168	0.8 U	0.8 U	5 J	1 U	11	9	1 J	2 J	1 U	4 J	0.5 U		
Deep	DW-20	5/12/2004	GW	162	0.8 U	0.8 U	5	1 U	12	8	1 J	2 J	1 U		0.5 U		
Deep	DW-20	8/18/2004	GW	21.5	0.9 J	0.8 U	2 J	1 U	5 J	3 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-20	11/11/2004	GW	14	0.8 U	0.8 U	2 J	1 U	5	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-20	2/15/2005	GW	42.1	0.8 U	0.8 U	3 J	1 U	6	3 J	1 U	0.9 J	1 U		0.5 U		
Deep	DW-20	2/19/2007	GW	500	0.8 U	0.8 U	8	1 U	15	17	2 J	3 J	1 U		0.5 U		
Deep	DW-20	9/27/2007	GW	570	0.8 U	0.8 U	9	1 U	19	18	2 J	4 J	1 U		0.5 U		
Deep	DW-20	5/14/2008	GW	430	5 UJ	5 UJ	6.5 J	5 UJ	7.6 J	11 J	1.6 J	2.5 J	5 UJ		5 UJ		
Deep	DW-20	8/28/2009	GW	2 UJ	0.8 UJ	0.8 UJ	3 J	1 UJ	13 J	3 J	1 UJ	0.8 UJ	1 UJ	70 UJ	0.5 UJ		
Deep	DW-20	4/1/2010	GW	2 U	0.8 U	0.8 U	3 J	1 U	16	3 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-20	8/30/2011	GW	0.2 U	0.8 U	0.8 U	4 J	1 U	14	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-20	5/4/2012	GW		0.8 U	0.8 U	4 J	1 U	13	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-20	5/4/2012	GW		0.8 U	0.8 U	4 J	1 U	13	3 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-20	5/22/2013	GW	1 U	0.8 U	0.8 U	4 Jj	1 U	13 j	2 Jj	1 U	0.8 U	1 U	0.7 j	0.5 U		
Deep	DW-20	5/18/2014	GW	1 U	0.5 U	0.5 U	5	0.5 U	14	3	0.5 U	0.5 U	0.5 J	0.5 U			
Deep	DW-20	11/11/2015	GW	0.2 U	0.5 U	0.5 U	10	0.5 U	19	2	0.5 U	0.5 U	0.6 J	0.81	0.5 U		
Deep	DW-20	4/1/2016	GW	0.2 U	0.5 U	0.5 U	7	0.5 U	14	2	0.5 U	0.5 U	0.5 J	0.63	0.5 U		
Deep	DW-20	4/18/2017	GW	280	0.5 U	0.5 U	8	0.5 U	6	7	2	2	0.5 U	0.05 U	0.5 U		

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		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-23	4/8/2004	GW	172	150	0.8 U	14	1 U	55	8	1 U	0.8 U	1 U		0.5 U	Retain and Sample	195
Deep	DW-23	5/11/2004	GW	250	130	0.8 U	14	1 U	54	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	8/18/2004	GW	471	150	0.8 U	22	1 U	120	8	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	11/10/2004	GW	3.1 J	89	0.8 U	16	1 U	74	31	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	2/16/2005	GW	14.8	67	0.8 U	19	1 U	66	6	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	2/20/2007	GW	32	36	0.8 U	14	1 U	32	5	1 U	0.8 U	1 J		0.5 U		
Deep	DW-23	10/14/2009	GW	35	61	0.8 U	15	1 U	40	3 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-23	3/17/2010	GW	27	78	0.8 U	13	1 U	52	4 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-23	8/31/2011	GW	23	48	0.8 U	15	1 U	47	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	8/31/2011	GW	24	52	0.8 U	15	1 U	47	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	5/2/2012	GW	22	54	0.8 U	16	1 U	49	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-23	5/23/2013	GW	18	65	0.8 U	15	1 U	43	4 J	1 U	0.8 U	1 U	12	0.5 U		
Deep	DW-23	5/14/2014	GW	21	53	0.5 U	16	0.5 U	59	5	0.8 J	0.5 U	0.7 J	9	0.5 U		
Deep	DW-25	11/8/2004	GW	427	9	0.8 U	2 J	1 U	48	81	1 U	0.8 U	1 U		0.5 U	Retain for water levels only; within capture zone of DW-13	185
Deep	DW-25	6/2/2008	GW		5 UJ	5 UJ	5 UJ	5 UJ	7.1 J	3.3 J	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	DW-25	10/15/2009	GW	0.22 J	0.9 J	0.8 U	3 J	1 U	12	2 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-25	3/19/2010	GW	48	0.8 U	0.8 U	1 U	1 U	5	4 J	1 U	1 J	1 U	70 U	0.5 U		
Deep	DW-25	9/12/2011	GW	0.66 J	3 J	0.8 U	51	1 U	11	0.8 U	1 U	0.8 U	6		0.5 U		
Deep	DW-25	5/2/2012	GW		3 J	0.8 U	85	1 U	6	0.9 J	1 U	0.8 U	6		0.5 U		
Deep	DW-25	5/23/2013	GW	1 U	0.8 U	0.8 U	75	1 U	2 J	0.8 U	1 U	0.8 U	4 J		0.5 U		
Deep	DW-25	5/23/2013	GW	1 U	0.8 U	0.8 U	75	1 U	1 J	0.8 U	1 U	0.8 U	4 J		0.5 U		
Deep	DW-25	5/13/2014	GW	64	0.5 U	0.5 U	2	0.5 U	2	0.7 J	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-26I	11/9/2004	GW	0.7 U	43	1 J	5	1 U	470	260	1 J	0.8 U	1 U		0.5 U	Retain and Sample	92
Deep	DW-26I	2/17/2005	GW	0.7 U	37	1 J	5 J	1 J	590	340	2 J	0.8 U	1 U		0.5 U		
Deep	DW-26I	6/5/2008	GW		500 UJ	500 UJ	500 UJ	500 UJ	640 J	740 J	500 UJ	500 UJ	500 UJ		500 UJ		
Deep	DW-26I	10/13/2009	GW	280	6	0.8 U	2 J	1 U	290	850	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-26I	4/6/2010	GW	480	2 J	2 U	2 U	2 U	130	1400	2 U	2 U	2 U	140 U	1 U		
Deep	DW-26I	11/11/2010	GW		5 J	0.8 U	4 J	1 U	110	1100	1 J	2 J	1 U	70 U	0.5 U		
Deep	DW-26I	9/8/2011	GW	180	4 J	0.8 U	12	1 U	72	720	1 U	1 J	4 J		0.5 U		
Deep	DW-26I	12/14/2011	GW		3 J	0.8 U	8	1 U	94	800	1 U	1 J	3 J		0.5 U		
Deep	DW-26I	12/14/2011	GW		3 J	0.8 U	8	1 U	92	780	1 U	1 J	3 J		0.5 U		
Deep	DW-26I	5/11/2012	GW	120	2 J	0.8 U	17	1 U	42	420	1 U	1 J	3 J		0.5 U		
Deep	DW-26I	5/23/2013	GW	90	1 J	0.8 U	21	1 U	25	360	1 U	0.8 J	2 J	2.7	0.5 U		
Deep	DW-26I	5/13/2014	GW	220	1	0.5 U	13	0.5 U	94	550	0.8 J	1	1		0.5 U		
Deep	DW-26I	11/11/2014	GW		1	0.5 U	10	0.5 U	35	380	0.6 J	0.6 J	0.8 J		0.5 U		

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-28I	11/8/2004	GW	52800	4200	8	220	13	3500	9	1 J	0.8 U	1 U		0.5 U		
Deep	DW-28I	2/17/2005	GW	928	4000	8 U	230	10 U	3900	8 U	10 U	8 U	10 U		5 U		
Deep	DW-28I	5/10/2005	GW	1740	4000	4 U	230	8 J	4600	4 U	5 U	4 U	5 U		3 U		
Deep	DW-28I	2/15/2006	GW	630	5300	10	360	16	5000	0.8 U	3 J	0.8 U	1 U		0.5 U		
Deep	DW-28I	5/12/2006	GW	500	3100	5	270	10	3100	0.8 U	1 J	0.8 U	1 U		0.5 U		
Deep	DW-28I	8/16/2006	GW	940	1800	3 J	190	6	2000	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28I	11/16/2006	GW	640	2000	3 J	160	5	2400	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28I	2/16/2007	GW	900	2500	4 J	200	10	2300	2 U	2 U	2 U	2 U		1 U		
Deep	DW-28I	10/1/2007	GW	77000	1600	3 J	120	6	1600	24	1 J	0.8 U	1 U		0.5 U		
Deep	DW-28I	5/15/2008	GW	29000	2900 J	500 UJ	170 J	500 UJ	3200 J	500 UJ	500 UJ	500 UJ	500 UJ		500 UJ		
Deep	DW-28I	6/9/2008	GW	40000	1600 J	500 UJ	110 J	500 UJ	2500 J	500 UJ	500 UJ	500 UJ	500 UJ		500 UJ		
Deep	DW-28I	9/29/2009	GW	54000	360	1 J	49	2 J	710	86	2 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28I	3/29/2010	GW	57000	640	0.8 U	63	1 U	1000	79	2 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28I	11/11/2010	GW		74	0.8 U	32	1 U	240	31	2 J	0.8 U	10	70 U	0.5 U		
Deep	DW-28I	11/11/2010	GW		73	0.8 U	32	1 U	230	30	2 J	0.8 U	10	70 U	0.5 U		
Deep	DW-28I	9/6/2011	GW	15000	36	0.8 U	39	1 U	130	26	2 J	0.8 U	9	5.6	0.5 U		
Deep	DW-28I	12/14/2011	GW		610	2 U	86	3 J	1100	120	2 U	2 U	4 J		1 U		
Deep	DW-28I	5/11/2012	GW	11000	30	0.8 U	40	1 U	96	16	3 J	0.8 U	5		0.5 U		
Deep	DW-28I	5/23/2013	GW	9800	24	0.8 U	53	1 U	72	18	3 J	0.8 U	4 J	5.3	0.5 U		
Deep	DW-28I	5/14/2014	GW	680	1100	2	160	4	1700	220	0.8 J	0.5 J	0.8 J	27	0.5 U		
Deep	DW-28I	11/12/2014	GW		160	0.5 U	57	0.7 J	180	31	2	0.9 J	3		0.5 U		
Deep	DW-28I	5/15/2015	GW	7700	140	0.5 U	55	0.5 U	250	27	2	1	4	7	0.5 U		
Deep	DW-28I	4/1/2016	GW	8100	140	0.5 U	55	0.8 J	260	37	1	1	3	8.3	0.5 U		
Deep	DW-28I	4/20/2017	GW	4800	120	0.5 U	35	0.5 U	250	52	1	1	2	0.24	0.5 U		
Deep	DW-28D	11/8/2004	GW	7450	180	0.8 U	15	1 U	290	27	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	2/17/2005	GW	10500	180	0.8 U	14	1 U	260	18	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	5/10/2005	GW	5090	120	0.8 U	12	1 U	250	21	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	2/15/2006	GW	3000	35	0.8 U	9	1 U	140	17	1 J	0.8 U	1 U		0.5 U		
Deep	DW-28D	5/12/2006	GW	4900	32	0.8 U	7	1 U	130	18	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	8/16/2006	GW	33000	200	0.8 U	18	1 U	230	18	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	11/16/2006	GW	7800	48	0.8 U	8	1 U	170	16	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	2/16/2007	GW	120000	860	2 J	69	4 J	810	15	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	9/27/2007	GW	3600	25	0.8 U	9	1 U	140	15	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28D	5/12/2008	GW	2900	50 UJ	50 UJ	50 UJ	50 UJ	76 J	50 UJ	50 UJ	50 UJ	50 UJ		50 UJ		
Deep	DW-28D	5/21/2008	GW	2900	50 UJ	50 UJ	50 UJ	50 UJ	64 J	50 UJ	50 UJ	50 UJ	50 UJ		50 UJ		
Deep	DW-28D	9/23/2009	GW	3200	5	0.8 U	5	1 U	86	21	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28D	3/29/2010	GW	1200	7	0.8 U	14	1 U	97	15	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28D	9/8/2011	GW	380	10	0.8 U	35	1 U	67	7	1 U	0.8 U	12		0.5 U		
Deep	DW-28D	5/11/2012	GW		5 J	0.8 U	41	1 U	45	6	1 U	0.8 U	7		0.5 U		
Deep	DW-28D	5/23/2013	GW	150	3 J	0.8 U	59	1 U	32	5	1 U	0.8 U	6	3.5	0.5 U		
Deep	DW-28D	5/23/2013	GW	150	3 J	0.8 U	55	1 U	31	5	1 U	0.8 U	5	3.7	0.5 U		
Deep	DW-28D	5/14/2014	GW	13000	28	0.5 U	47	0.5 U	73	18	2	0.6 J	4		0.5 U		

Retain and Sample: exceeded SLs for perchlorate, PCE, 11DCE, and Vc in 2014; within DW-13 capture zone; provides downgradient monitoring for DW-24 and vertical coverage with DW-28D near the DW-13 extraction well

**Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area**

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-29S	11/9/2004	GW	47800	9	0.8 U	2 J	1 U	21	3 J	1 U	0.8 U	1 U		0.5 U	Retain and Sample	30
Deep	DW-29S	2/17/2005	GW	390000	4 J	0.8 U	2 J	1 U	21	12	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29S	5/11/2005	GW	529000	5 J	0.8 U	2 J	1 U	11	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29S	5/10/2006	GW	1600000	1 J	0.8 U	3 J	1 U	16	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29S	2/16/2007	GW	1500000	5 J	0.8 U	2 J	1 U	13	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29S	10/3/2007	GW	510000													
Deep	DW-29S	5/16/2008	GW	410000	0.86 J	5 UJ	1.7 J	5 UJ	7.4 U	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	DW-29S	9/25/2009	GW	160000	0.8 U	0.8 U	1 U	1 U	7	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-29S	3/31/2010	GW	84000	0.8 U	0.8 U	1 J	1 U	6	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-29S	9/7/2011	GW	67000													
Deep	DW-29S	5/10/2012	GW	75000													
Deep	DW-29S	5/22/2013	GW	170000										4.7			
Deep	DW-29S	5/13/2014	GW	150000													
Deep	DW-29S	5/15/2015	GW	24	0.5 U	0.5 U	5	0.6 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-29S	4/1/2016	GW	220000	0.5 J	0.5 U	8	0.5 U	8	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-29S	4/20/2017	GW	120000	0.5 U	0.5 U	4	0.5 U	3	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-29I	11/9/2004	GW	1330	8	0.8 U	2 J	1 U	14	1 J	1 U	0.8 U	1 U		0.5 U	Retain for Water Levels: exceeded for perchlorate only in 2014; VOCs below SLs with decreasing trends; within DW-13 capture zone	145
Deep	DW-29I	2/17/2005	GW	1120	9	0.8 U	2 J	1 U	17	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	5/11/2005	GW	1350	9	0.8 U	2 J	1 U	18	0.8 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	5/10/2006	GW	290	7	0.8 U	2 J	1 U	17	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	2/19/2007	GW	720	4 J	0.8 U	3 J	1 U	15	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	2/19/2007	GW	690	4 J	0.8 U	3 J	1 U	15	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	9/27/2007	GW	0.2 U	3 J	0.8 U	3 J	1 U	14	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-29I	5/16/2008	GW	1 U	1.4 J	5 UJ	2.8 J	5 UJ	8.8 J	5 UJ	5 UJ	5 UJ	5 UJ		0.97 J		
Deep	DW-29I	9/25/2009	GW	0.2 U	0.8 U	0.8 U	20	1 U	64	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-29I	11/23/2009	GW	1 U	0.8 U	0.8 U	52	1 U	140	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-29I	2/3/2010	GW	1 U	0.8 U	0.8 U	46	1 U	120	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-29I	4/7/2010	GW	2 U	0.8 U	0.8 U	53	1 U	140	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-29I	6/16/2010	GW	0.2 U	0.8 U	0.8 U	53	1 U	140	0.8 U	1 U	0.8 U	10	70 U	0.5 U		
Deep	DW-29I	8/10/2010	GW	2 U	0.8 U	0.8 U	34	1 U	75	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-29I	10/6/2010	GW	0.2 U	0.8 U	0.8 U	49	1 U	95	0.8 U	1 U	0.8 U	14	70 U	0.5 U		
Deep	DW-29I	12/7/2010	GW	0.2 U	3 J	0.8 U	69	1 U	57	0.8 U	1 U	0.8 U	34	70 U	0.5 U		
Deep	DW-29I	2/3/2011	GW	2 U	2 J	0.8 U	60	1 U	56	0.8 U	1 U	0.8 U	20	70 U	0.5 U		
Deep	DW-29I	6/9/2011	GW	0.2 U	1 J	0.8 U	67	1 U	37	0.8 U	1 U	0.8 U	15	70 U	0.5 U		
Deep	DW-29I	9/15/2011	GW	0.2 U	0.8 U	0.8 U	46	1 U	38	0.8 U	1 U	0.8 U	9		0.5 U		
Deep	DW-29I	12/13/2011	GW	0.2 U	0.8 U	0.8 U	64	1 U	27	0.8 U	1 U	0.8 U	12		0.5 U		
Deep	DW-29I	5/10/2012	GW	0.2 U	0.8 U	0.8 U	74	1 U	19	0.8 U	1 U	0.8 U	9		0.5 U		
Deep	DW-29I	5/28/2013	GW	1 U	0.8 U	0.8 U	57	1 U	2 J	0.8 U	1 U	0.8 U	7		0.5 U		
Deep	DW-29I	11/19/2013	GW	0.2 U	0.8 U	0.8 U	53	1 U	1 J	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-29I	5/13/2014	GW	1 U	0.5 U	0.5 U	51	0.5 U	6	0.5 U	0.5 U	0.5 U	6		0.5 U		
Deep	DW-29I	5/13/2014	GW	1 U	0.5 U	0.5 U	50	0.5 U	6	0.5 U	0.5 U	0.5 U	6		0.5 U		
Deep	DW-29I	11/12/2014	GW	21	0.5 U	0.5 U	7	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-30S	11/9/2004	GW	937	63	0.8 U	26	1 U	170	4 J	1 U	0.8 U	1 U		0.5 U	Retain and Sample	35
Deep	DW-30S	2/17/2005	GW	680	78	0.8 U	9	1 U	140	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30S	5/11/2005	GW	497	37	0.8 U	8	1 U	93	1 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30S	5/8/2006	GW	390	21	0.8 U	6	1 U	62	1 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30S	5/22/2008	GW		9.4 J	5 UJ	3.1 J	5 UJ	33 J	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	DW-30S	10/16/2009	GW	180	1 J	0.8 U	1 U	1 U	8	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-30S	3/29/2010	GW	140	4 J	0.8 U	1 U	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-30S	9/8/2011	GW	170	0.8 J	0.8 U	1 U	1 U	9	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30S	5/29/2013	GW	200	0.8 U	0.8 U	1 U	1 U	6	0.8 U	1 U	0.8 U	1 U	0.14	0.5 U		
Deep	DW-30S	5/14/2015	GW	140	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	1	0.5 U		0.5 U		
Deep	DW-30S	3/31/2016	GW	250	0.5 U	0.5 U	0.6 J	0.5 U	11	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-30S	4/19/2017	GW	210	0.5 U	0.5 U	0.5 U	0.5 U	3	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-32I	11/22/2005	GW	61	360	5 J	150	9	4300 J	2 J	13	1 J	290		4 J	Retain and Sample	40
Deep	DW-32I	5/8/2006	GW	40	370	5	200	11	5900	2 J	14	2 J	120		4 J		
Deep	DW-32I	9/28/2007	GW	0.5 J	250	15	420	22	5700	5 J	20	4 J	320		14		
Deep	DW-32I	6/3/2008	GW	0.35 J	130 J	500 UJ	140 J	500 UJ	2200 J	500 UJ	500 UJ	500 UJ	330 J		500 UJ		
Deep	DW-32I	10/15/2009	GW	0.2 U	88	16	260	20	2600	6	14	2 J	140	400	21		
Deep	DW-32I	3/30/2010	GW	0.25 J	510	61	730	73	9900	16	51	5	240	1500	46		
Deep	DW-32I	3/30/2010	GW	0.32 J	520	60	730	74	11000	16	51	5	240	1600	46		
Deep	DW-32I	9/6/2011	GW		92	8	190	10	2100	2 J	7	1 J	110	270	11		
Deep	DW-32I	12/13/2011	GW		160	27	470	29	5300	8	21	2 J	140		29		
Deep	DW-32I	5/8/2012	GW		40	5 J	130	6	1500	2 J	4 J	0.8 U	96		6		
Deep	DW-32I	5/30/2013	GW	1 U	120	14	300	19	3200	6	14	2 J	110	300	17		
Deep	DW-32I	5/15/2014	GW		200	36	720	43	7400	12	31	3	100	660 j	36		
Deep	DW-32I	11/12/2014	GW		83	11	270	16	2400	4	10	0.5 U	46		15		
Deep	DW-32I	5/14/2015	GW	0.2 U	140	26	630	35	6400	7 J	24	6 J	110	550	24		
Deep	DW-32I	4/1/2016	GW	0.2 U	28	10	250	12	2000	4	8	1 U	33	250	13		
Deep	DW-32I	4/19/2017	GW	0.28 J	3	1	38	2	280	1	1	0.5 U	36	0.055 J	1		

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-36D	9/28/2009	GW	0.2 U	60	0.8 U	39	1 U	280	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U	Retain for Water Levels	219
Deep	DW-36D	9/28/2009	GW	0.2 U	57	0.8 U	36	1 U	260	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-36D	10/27/2009	GW	0.2 U	26	0.8 U	60	1 U	230	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-36D	11/23/2009	GW	0.2 U	33	0.8 U	60	1 U	260	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-36D	1/5/2010	GW	0.2 U	31	0.8 U	56	1 U	240	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-36D	2/3/2010	GW	2 U	37	0.8 U	57	1 U	240	0.8 U	1 U	0.8 U	6	70 U	0.5 U		
Deep	DW-36D	3/3/2010	GW	0.2 U	15	0.8 U	61	1 U	210	0.8 U	1 U	0.8 U	8	70 U	0.5 U		
Deep	DW-36D	4/7/2010	GW	2 U	25	0.8 U	63	1 U	230 J	0.8 U	1 U	0.8 U	14	70 U	0.5 U		
Deep	DW-36D	6/16/2010	GW	0.2 U	14	0.8 U	69	1 U	81	0.8 U	1 U	0.8 U	66	70 U	0.5 U		
Deep	DW-36D	8/10/2010	GW	2 U	18	0.8 U	68	1 U	23	0.8 U	1 U	0.8 U	40 J	70 U	0.5 U		
Deep	DW-36D	10/6/2010	GW	0.2 U	24	0.8 U	83	1 U	3 J	0.8 U	1 U	0.8 U	30	70 U	0.5 U		
Deep	DW-36D	12/7/2010	GW	0.2 U	10	0.8 U	78	1 U	9	0.8 U	1 U	0.8 U	37	70 U	0.5 U		
Deep	DW-36D	12/7/2010	GW	2 U	10	0.8 U	76	1 U	9	0.8 U	1 U	0.8 U	37	70 U	0.5 U		
Deep	DW-36D	2/3/2011	GW	2 U	7	0.8 U	83	1 U	3 J	0.8 U	1 U	0.8 U	21	70 U	0.5 U		
Deep	DW-36D	2/3/2011	GW	2 U	7	0.8 U	83	1 U	3 J	0.8 U	1 U	0.8 U	21	70 U	0.5 U		
Deep	DW-36D	6/8/2011	GW	0.2 U	2 J	0.8 U	92	1 U	0.8 U	0.8 U	1 U	0.8 U	9	70 U	0.5 U		
Deep	DW-36D	9/14/2011	GW	0.2 U	2 J	0.8 U	78	1 U	2 J	0.8 U	1 U	0.8 U	11		0.5 U		
Deep	DW-36D	12/13/2011	GW	0.2 U	0.8 U	0.8 U	94	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-36D	2/27/2012	GW	0.2 U	2 J	0.8 U	86	1 U	5 J	0.8 U	1 U	0.8 U	24	70 U	0.5 U		
Deep	DW-36D	5/9/2012	GW	0.2 U	1 J	0.8 U	83	1 U	1 J	0.8 U	1 U	0.8 U	7		0.5 U		
Deep	DW-36D	8/16/2012	GW	0.2 U	2 J	0.8 U	82	1 U	1 J	0.8 U	1 U	0.8 U	8		0.5 U		
Deep	DW-36D	11/6/2012	GW	0.2 U	0.8 U	0.8 U	20	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-36D	5/28/2013	GW	1 U	0.8 U	0.8 U	64	1 U	0.8 U	0.8 U	1 U	0.8 U	3 J		0.5 U		
Deep	DW-36D	11/19/2013	GW	0.2 U	0.8 U	0.8 U	11	1 U	0.9 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-36D	5/13/2014	GW	1 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Deep	DW-36D	11/12/2014	GW	1 U	0.5 U	0.5 U	72	0.5 U	4	0.5 U	0.5 U	0.5 U	0.5 U	19		0.5 U	

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-72B	11/11/2002	GW		155	3.4	164	4.5	1232	2.9	3.2	1	2.2				
Deep	DW-72B	11/11/2002	GW		79.7	1.7	93	2.5	529	2.6	1.7	1 U	1				
Deep	DW-72B	5/13/2004	GW	416	52	0.8 U	7	1 U	260	4 J	1 U	0.8 U	1 U			0.5 U	
Deep	DW-72B	8/20/2008	GW	0.2 U	1 J	0.8 U	30	1 J	81	0.8 U	1 U	0.8 U	22	70 U	2 U		
Deep	DW-72B	8/20/2008	GW	0.2 U	1 J	0.8 U	29	1 J	79	0.8 U	1 U	0.8 U	22	70 U	2 U		
Deep	DW-72B	9/28/2009	GW	0.2 U	4 J	2 J	67 J	3 J	160	4 J	2 J	0.8 U	120	70 U	5		
Deep	DW-72B	11/23/2009	GW	0.2 U	3 J	2 J	75	1 U	130	0.8 U	2 J	0.8 U	120	70 U	5		
Deep	DW-72B	2/3/2010	GW	0.2 U	6	3 J	110	5	180	0.8 U	3 J	0.8 U	160	98 J	8		
Deep	DW-72B	4/7/2010	GW	0.2 U	5 J	3 J	110	5 J	170	0.8 U	3 J	0.8 U	140	120 J	8		
Deep	DW-72B	6/16/2010	GW	0.2 U	9	5 J	200	8	280	1 J	5	1 J	180	140 J	15		
Deep	DW-72B	8/10/2010	GW	0.2 U	8	4 J	180	8	260	1 J	5 J	1 J	280	170 J	14		
Deep	DW-72B	10/7/2010	GW	0.2 U	5 J	2 J	88	4 J	160	0.9 J	2 J	0.8 U	140	76 J	7		
Deep	DW-72B	12/7/2010	GW	0.2 U	5 J	3 J	130	6	210	1 J	3 J	0.8 U	180	170 J	10		
Deep	DW-72B	2/3/2011	GW	2 U	0.8 U	0.8 U	1 J	1 U	1 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-72B	6/9/2011	GW	0.2 U	7	3 J	170	8	270	1 J	4 J	0.9 J	210	190 J	12		
Deep	DW-72B	9/15/2011	GW	0.2 U	4 J	2 J	100	5 J	190	0.9 J	3 J	0.8 U	110		8		
Deep	DW-72B	12/14/2011	GW	0.2 U	3 J	2 J	110	4 J	180	0.9 J	3 J	0.8 U	160		8		
Deep	DW-72B	5/10/2012	GW	0.2 U	5	3 J	150	6	340	1 J	4 J	0.9 J	220		11		
Deep	DW-72B	5/28/2013	GW	1 U	2 J	0.9 J	71	3 J	130	0.8 U	2 J	0.8 U	98	89 j	5 J		
Deep	DW-72B	11/20/2013	GW	0.2 U	2 J	1 J	61	3 J	280	0.8 U	2 J	0.8 U	130	73 J	3 J		
Deep	DW-72B	5/13/2014	GW	1 U	0.7 J	0.5 U	39	2	100	0.5 U	1	0.5 U	64		3		
Deep	DW-72B	11/11/2014	GW	1 U	2	2	95	4	270	0.6 J	2	0.6 J	130		7		
Deep	DW-72B	5/15/2015	GW	0.2 U	1	0.7 J	72	3	230	0.5 U	1	0.5 U	94	70	4		
Deep	DW-72B	4/1/2016	GW	0.2 U	2	1 J	100	4	310	0.5 U	3	0.6 J	130	91	7		
Deep	DW-72B	4/19/2017	GW	0.32 J	0.5 U	0.5 U	32	1	36	0.5 U	0.5 U	0.5 U	30	18	2		
Deep	IW-6	10/27/2005	GW	570000	9	0.8 U	3 J	1 U	29	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	IW-6	7/16/2009	GW	5500	38	0.8 U	44	1 U	200	0.8 U	27	1 J	3 J	70 UJ	0.5 U		
Deep	IW-6	11/11/2010	GW		10	0.8 U	7	1 U	10	5 J	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	IW-6	9/12/2011	GW	230000	2 J	0.8 U	8	1 U	20	6	1 U	0.8 U	2 J		0.5 U		
Deep	IW-6	12/14/2011	GW		0.8 U	0.8 U	3 J	1 U	3 J	0.8 U	1 U	0.8 U	1 J		0.5 U		
Deep	IW-6	5/11/2012	GW	180000	4 J	0.8 U	17	1 U	22	7	1 U	0.8 U	2 J		0.5 U		
Deep	IW-6	5/30/2013	GW	110000	4 J	0.8 U	31	1 U	21	8	1 U	0.8 U	3 J	5.1	0.5 U		
Deep	IW-6	5/15/2014	GW		2	0.5 U	31	0.5 U	15	5	0.5 U	0.5 U	2		0.5 U		
Deep	IW-6	11/12/2014	GW		1 J	0.5 U	22	0.5 U	7	4	0.5 U	0.5 U	0.8 J		0.5 U		
Deep	IW-6	5/15/2015	GW	100000	1	0.5 U	31	0.5 U	12	5	0.5 U	0.5 U	2		0.5 U		
Deep	IW-6	4/1/2016	GW	4500	0.5 U	0.5 U	10	0.5 U	2	0.9 J	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	IW-6	4/20/2017	GW	290	0.5 U	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	IW-8	10/27/2005	GW	24	2 J	0.8 U	1 U	1 U	3 J	0.8 U	1 U	0.8 U	1 U		0.5 U	Retain - Injection Well	191
Deep	IW-7	10/27/2005	GW	24	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	Abandonment approved in 2011 - Retain as backup to IW-8 injection point.	60
Deep	DW 52-01	11/4/2008	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 52-01	10/5/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 52-01	3/26/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 52-01	3/26/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 52-01	5/22/2013	GW	1.5 j	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		

**Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area**

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth	
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)	
Deep	DW 68-01	11/4/2008	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for >3 years	457	
Deep	DW 68-01	10/5/2009	GW	2 U	0.9 J	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW 68-01	3/26/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW 68-01	5/22/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U				
Deep	DW 106-01	6/23/2008	GW	0.24 J	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for 3 years (2008-2010)	253	
Deep	DW 106-01	10/9/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	3 J	1 J	1 U	70 U	0.5 U			
Deep	DW 106-01	10/9/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	3 J	1 J	1 U	70 U	0.5 U			
Deep	DW 106-01	3/23/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 J	1 J	1 U	70 U	0.5 U			
Deep	DW-5	5/21/2003	GW	12.7	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U			Abandon: below SLs for >3 years	185	
Deep	DW-5	4/5/2004	GW	5.7 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-5	5/10/2004	GW	8.7	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-5	8/17/2004	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-5	11/10/2004	GW	0.7 U	3 J	0.8 U	1 U	1 U	8	6	1 U	0.8 U	1 U					
Deep	DW-5	2/16/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	5 J	17	1 U	0.8 U	1 U					
Deep	DW-5	5/10/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-5	5/9/2006	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-5	10/19/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW-5	3/19/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW-5	5/23/2013	GW	1 U	0.8 U	0.8 U	6	1 U	1 J	0.8 U	1 U	0.8 U	1 U	0.5 U				
Deep	DW-14	5/16/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			Abandon: below SLs for >3 years	185	
Deep	DW-14	5/21/2003	GW	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Deep	DW-14	3/25/2004	GW	4.4 J	7	0.8 U	1 J	1 U	10	4 J	1 U	0.8 U	1 U					
Deep	DW-14	5/13/2004	GW	1.3 U	4 J	0.8 U	1 U	1 U	6	2 J	1 U	0.8 U	1 U					
Deep	DW-14	8/18/2004	GW	0.7 U	3 J	0.8 U	1 U	1 U	6	2 J	1 U	0.8 U	1 U					
Deep	DW-14	11/11/2004	GW	0.7 U	1 J	0.8 U	1 U	1 U	3 J	1 J	1 U	0.8 U	1 U					
Deep	DW-14	2/16/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U					
Deep	DW-14	5/10/2006	GW	7.3 J	0.8 U	0.8 U	1 U	1 U	3 J	1 J	1 U	0.8 U	1 U					
Deep	DW-14	10/22/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW-14	3/25/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Deep	DW-14	5/28/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 U	1 U	0.5 U				
Deep	DW-17	8/19/2002	GW		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	Abandon: below SLs for >3 years	220	
Deep	DW-17	2/14/2003	GW		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ				
Deep	DW-17	5/20/2003	GW	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Deep	DW-17	11/22/2003	GW	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Deep	DW-17	3/25/2004	GW	2.6 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	1 U	0.5 U	220	
Deep	DW-17	5/10/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	1 U			
Deep	DW-17	9/28/2007	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	1 U			
Deep	DW-17	5/28/2008	GW	1 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ			
Deep	DW-17	10/22/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	
Deep	DW-17	3/25/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	
Deep	DW-17	5/28/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.8 U	0.057 J	0.5 U		
Deep	DW-26S	11/9/2004	GW	2.6 J	5 J	0.8 U	1 U	1 U	45	45	1 U	0.8 U	1 U			Abandon: below SLs or non-detect for 3 years	36	
Deep	DW-26S	2/17/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	16	25	1 U	0.8 U	1 U					
Deep	DW-26S	6/5/2008	GW		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ			
Deep	DW-26S	10/13/2009	GW	0.83 J	0.8 U	0.8 U	1 U	1 U	2 J	1 J	1 U	0.8 U	1 U	0.8 U	1 U			
Deep	DW-26S	4/7/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.8 U	1 U	0.8 U	1 U			
Deep	DW-26S	5/23/2013	GW	1 U														

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth	
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)	
Deep	DW-29D	11/9/2004	GW	627	16	0.8 U	4 J	1 U	54	4 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-29D	2/17/2005	GW	244	12	0.8 U	2 J	1 U	34	7	1 U	0.8 U	1 U		0.5 U			
Deep	DW-29D	5/11/2005	GW	131	10	0.8 U	2 J	1 U	28	0.8 U	1 U	0.8 U	1 U		0.5 U			
Deep	DW-29D	5/10/2006	GW	16	0.8 U	0.8 U	4 J	1 U	18	0.8 U	1 U	0.8 U	1 U		0.5 U			
Deep	DW-29D	2/19/2007	GW	100	0.8 U	0.8 U	5 J	1 U	15	0.8 U	1 U	0.8 U	2 J		0.5 U			
Deep	DW-29D	9/27/2007	GW	0.2 U	0.8 U	0.8 U	10	1 U	20	0.8 U	1 U	0.8 U	3 J		0.5 U			
Deep	DW-29D	6/2/2008	GW	1 U	1.2 J	5 UJ	25 J	5 UJ	100 J	5 UJ	5 UJ	5 UJ	2.7 J		5 UJ			
Deep	DW-29D	9/25/2009	GW	0.2 U	13	0.8 U	52	1 U	200	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U			
Deep	DW-29D	11/23/2009	GW	1 U	7	0.8 U	67	1 U	220	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U			
Deep	DW-29D	11/23/2009	GW	1 U	7	0.8 U	67	1 U	220	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U			
Deep	DW-29D	2/3/2010	GW	2 U	14	0.8 U	61	1 U	190	0.8 U	1 U	0.8 U	9	70 U	0.5 U			
Deep	DW-29D	4/7/2010	GW	2 U	7	0.8 U	61	1 U	170	0.8 U	1 U	0.8 U	17	70 U	0.5 U			
Deep	DW-29D	6/16/2010	GW	0.2 U	3 J	0.8 U	65	1 U	120	0.8 U	1 U	0.8 U	44	70 U	0.5 U			
Deep	DW-29D	8/10/2010	GW	0.2 U	4 J	0.8 U	57	1 U	47	0.8 U	1 U	0.8 U	25	70 U	0.5 U			
Deep	DW-29D	10/6/2010	GW	0.2 U	5	0.8 U	75	1 U	37	0.8 U	1 U	0.8 U	30	70 U	0.5 U			
Deep	DW-29D	12/6/2010	GW	0.2 UJ	4 J	0.8 U	74 J	1 U	20	0.8 U	1 U	0.8 U	24	70 U	0.5 U			
Deep	DW-29D	2/3/2011	GW	2 U	3 J	0.8 U	72	1 U	15	0.8 U	1 U	0.8 U	14	70 U	0.5 U			
Deep	DW-29D	6/8/2011	GW	0.2 U	0.9 J	0.8 U	79	1 U	7	0.8 U	1 U	0.8 U	7	70 U	0.5 U			
Deep	DW-29D	9/15/2011	GW	0.2 U	0.8 U	0.8 U	70	1 U	3 J	0.8 U	1 U	0.8 U	4 J		0.5 U			
Deep	DW-29D	9/15/2011	GW	0.2 U	0.8 U	0.8 U	68	1 U	3 J	0.8 U	1 U	0.8 U	4 J		0.5 U			
Deep	DW-29D	12/13/2011	GW	0.2 U	0.8 U	0.8 U	77	1 U	0.9 J	0.8 U	1 U	0.8 U	4 J		0.5 U			
Deep	DW-29D	5/10/2012	GW	0.2 U	0.8 U	0.8 U	74	1 U	2 J	0.8 U	1 U	0.8 U	4 J		0.5 U			
Deep	DW-29D	5/28/2013	GW	1 U	0.8 U	0.8 U	70	1 U	2 J	0.8 U	1 U	0.8 U	3 J		0.5 U			
Deep	DW-29D	11/19/2013	GW	0.2 U	0.8 U	0.8 U	43	1 U	0.8 U	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U			
Deep	DW-29D	5/13/2014	GW	1 U	0.5 U	0.5 U	37	0.5 U	0.9 J	0.5 U	0.5 U	0.5 U	2		0.5 U			
Deep	DW-29D	11/11/2014	GW	7.9	0.5 U	0.5 U	6	0.5 U	0.7 J	0.6 J	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-34	2/15/2006	GW	0.91 J	0.8 U	0.8 U	2 J	1 U	11	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	3/6/2006	GW	8.5	2 J	0.8 U	3 J	1 U	14	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	4/25/2006	GW	0.2 U	1 J	0.8 U	3 J	1 U	11	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	5/12/2006	GW	0.2 U	1 J	0.8 U	3 J	1 U	13	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	7/7/2006	GW	2.7	1 J	0.8 U	3 J	1 U	15	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	8/16/2006	GW	0.29 J	0.8 U	0.8 U	3 J	1 U	11	2 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	9/21/2006	GW	0.59 J	1 J	0.8 U	3 J	1 U	18	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	10/26/2006	GW	5.4	0.9 J	0.8 U	3 J	1 U	13	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	11/13/2006	GW	0.4 J	0.8 U	0.8 U	3 J	1 U	13	3 J	1 U	0.8 U	1 U		0.5 U			
Deep	DW-34	2/16/2007	GW	2.3	1 J	0.8 U	3 J	1 U	17	3 J	1 U	0.8 U	1 U		0.5 U			

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-34	4/20/2007	GW	0.6 J													
Deep	DW-34	5/2/2007	GW	0.2 J													
Deep	DW-34	5/16/2007	GW	5 U													
Deep	DW-34	6/5/2007	GW	3 U													
Deep	DW-34	6/12/2007	GW	5 U													
Deep	DW-34	6/26/2007	GW	0.2 U													
Deep	DW-34	7/13/2007	GW	0.2 U													
Deep	DW-34	7/24/2007	GW	0.2 U													
Deep	DW-34	8/7/2007	GW	0.2 U													
Deep	DW-34	9/5/2007	GW	0.2 UJ													
Deep	DW-34	9/19/2007	GW	0.2 U													
Deep	DW-34	10/4/2007	GW	0.2 U													
Deep	DW-34	10/15/2007	GW	0.2 U													
Deep	DW-34	11/1/2007	GW	2 U													
Deep	DW-34	11/14/2007	GW	2 U													
Deep	DW-34	11/27/2007	GW	2.9 J													
Deep	DW-34	12/11/2007	GW	9.3 J													
Deep	DW-34	12/28/2007	GW	2 U													
Deep	DW-34	1/9/2008	GW	2.1 J													
Deep	DW-34	2/7/2008	GW	2 U													
Deep	DW-34	2/21/2008	GW	2 U													
Deep	DW-34	3/4/2008	GW	2 U													225
Deep	DW-34	3/18/2008	GW	2 U													
Deep	DW-34	4/17/2008	GW	2 U													
Deep	DW-34	5/1/2008	GW	2 U													
Deep	DW-34	5/15/2008	GW	1 U													
Deep	DW-34	5/28/2008	GW	1 U													
Deep	DW-34	6/11/2008	GW	1 U													
Deep	DW-34	6/26/2008	GW	10													
Deep	DW-34	7/10/2008	GW	0.8 U													
Deep	DW-34	7/24/2008	GW	0.8 U													
Deep	DW-34	8/7/2008	GW	0.2 U													
Deep	DW-34	8/21/2008	GW	0.2 U													
Deep	DW-34	9/4/2008	GW	13													
Deep	DW-34	9/18/2008	GW	2 U													
Deep	DW-34	9/30/2008	GW	18													
Deep	DW-34	10/15/2008	GW	2 U													
Deep	DW-34	10/30/2008	GW	0.2 U													
Deep	DW-34	11/12/2008	GW	0.2 U													
Deep	DW-34	11/25/2008	GW	0.2 U													
Deep	DW-34	12/10/2008	GW	0.2 U													
Deep	DW-34	12/23/2008	GW	2 U													
Deep	DW-34	1/8/2009	GW	2 U													
Deep	DW-34	10/12/2009	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	6	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-34	4/1/2010	GW	2 U	0.8 U	0.8 U	2 J	1 U	4 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-34	9/12/2011	GW		0.8 U	0.8 U	1 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U		0.5 U		

Abandon: below SLs for at least 3 years

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(cont.)

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW CM-01	6/24/2008	GW	52 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SL for perchlorate in 2014, but slightly exceeded earlier; below SLs for VOCs in 2008-2010; retaining nearby BW CM-03 (50 ft), with similar perchlorate concentrations	72
Deep	DW CM-01	10/9/2009	GW	46	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW CM-01	3/24/2010	GW	45	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW CM-01	9/12/2011	GW	46													
Deep	DW CM-01	4/3/2012	GW	52													
Deep	DW CM-01	5/29/2013	GW	42													
Deep	DW CM-01	5/15/2014	GW	10													
Deep	DW-3	11/8/2004	GW	0.7 U	33	0.8 U	17	1 U	46	58	24	16	1 J		5	Abandon: exceeds SLs for PCE and TCE with stable to decreasing concentrations; redundant with ongoing monitoring downgradient at DW-18 (350 ft) with similar COC profile and depth	340
Deep	DW-3	2/16/2005	GW	0.7 U	1 J	0.8 U	18	1 U	12	79	29	21	1 J		6		
Deep	DW-3	5/10/2006	GW	51	0.8 U	0.8 U	20	1 U	13	53	58	26	1 J		7		
Deep	DW-3	8/17/2006	GW	0.2 U	0.8 U	0.8 U	10	1 U	7	46	41		1 U		4 J		
Deep	DW-3	8/17/2006	GW	0.2 U	0.8 U	0.8 U	10	1 U	7	40	36		1 U		4 J		
Deep	DW-3	11/16/2006	GW	1.1	0.8 U	0.8 U	11	1 U	8	49	49		1 U		4 J		
Deep	DW-3	11/16/2006	GW	1.6	0.8 U	0.8 U	11	1 U	7	47	46		1 U		4 J		
Deep	DW-3	2/20/2007	GW	16	0.8 U	0.8 U	17	1 U	10	30	86	30	1 J		6		
Deep	DW-3	9/27/2007	GW	0.2 U	0.8 U	0.8 U	18	1 U	12	17	31	98	4 J		6		
Deep	DW-3	5/21/2008	GW	1 U	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	79 J	50 UJ		50 UJ		
Deep	DW-3	10/22/2009	GW	0.2 U	0.8 U	0.8 U	15	1 U	9	9	18	88	3 J	70 U	4 J		
Deep	DW-3	3/31/2010	GW	2 U	0.8 U	0.8 U	14	1 U	9	8	15	88	5	70 U	5 J		
Deep	DW-3	8/31/2011	GW		0.8 U	0.8 U	14	1 U	8	10	18	72	2 J		3 J		
Deep	DW-3	12/12/2011	GW		0.8 U	0.8 U	12	1 U	8	9	16	66	2 J		2 J		
Deep	DW-3	5/4/2012	GW		0.8 U	0.8 U	13	1 U	9	17	26	61	2 J		2 J		
Deep	DW-3	5/23/2013	GW	1 U	0.8 U	0.8 U	14	1 U	7	8	17	78	2 J	3.2	2 J		
Deep	DW-3	5/14/2014	GW		0.5 U	0.5 U	12	0.5 U	8	17	27	53	0.8 J		0.5 U		
Deep	DW-3	11/11/2014	GW		0.5 U	0.5 U	12	0.5 U	6	12	20	45	0.5 U		0.5 U		
Deep	DW-3	5/15/2015	GW	2.3	0.5 U	0.5 U	11	0.5 U	6	9	19	46	0.7 J		0.7 J		
Deep	DW-3	3/31/2016	GW	0.7 J	0.5 U	0.5 U	11	0.5 U	7	8	20	48	0.6 J		0.5 U		
Deep	DW-3	4/19/2017	GW	0.3 J	0.5 U	0.5 U	12	0.5 U	7	11	30	46	0.8 J		4		

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-24	4/6/2004	GW	1600	24	2 U	2 U	2 U	340	1300	2 U	2 U	2 U	2 U	1 U		
Deep	DW-24	4/20/2004	GW												3 J		
Deep	DW-24	8/20/2004	GW	1300	16	0.8 U	2 J	1 U	250	670	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	8/20/2004	GW	1340	16	0.8 U	2 J	1 U	240	650	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	9/1/2004	GW	1200	21 J	4 U	5 U	5 U	340	1700	5 U	4 U	5 U		3 U		
Deep	DW-24	9/1/2004	GW	999													
Deep	DW-24	11/10/2004	GW	41.8	13	0.8 U	2 J	1 U	200	220	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	2/16/2005	GW	24.6	10	0.8 U	2 J	1 U	200	190	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	2/16/2005	GW	19.4	10	0.8 U	2 J	1 U	200	190	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	5/9/2006	GW	75	4 J	0.8 U	1 U	1 U	110	130	1 U	0.8 U	1 U		0.5 U		
Deep	DW-24	2/16/2007	GW	170	10	0.8 U	1 J	1 U	210	500	1 J	5	1 U		0.5 U		
Deep	DW-24	9/29/2009	GW	200	0.8 U	0.8 U	2 J	1 U	36	270	2 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-24	4/6/2010	GW	310	2 J	2 U	2 U	2 U	82	960	2 U	3 J	2 U	140 U	1 U		
Deep	DW-24	4/6/2010	GW	310	3 J	0.8 U	2 J	1 U	100	980	2 J	4 J	1 U	70 U	0.5 U		
Deep	DW-24	9/9/2011	GW	91	5 UJ	0.8 U	45	1 U	29	190	1 U	0.8 U	9		0.5 U		
Deep	DW-24	9/9/2011	GW	88	5 UJ	0.8 U	45	1 U	30	190	1 U	0.8 U	10		0.5 U		
Deep	DW-24	5/11/2012	GW	62	2 J	0.8 U	54	1 U	18	160	2 J	1 J	5		0.5 U		
Deep	DW-24	5/22/2013	GW	41	0.9 J	0.8 U	54	1 U	11	120	3 J	6	3 J	4	0.5 U		
Deep	DW-24	5/22/2013	GW	40	1 J	0.8 U	54	1 U	11	110	3 J	6	3 J	4.3	0.5 U		
Deep	DW-24	5/13/2014	GW	440	2	0.5 U	9	0.5 U	130	900	3	2	0.5 J		0.5 U		
Deep	DW-26D	11/9/2004	GW	3.9 J	15	0.8 U	1 U	1 U	25	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-26D	2/17/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	3 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-26D	9/28/2007	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	23	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-26D	5/15/2008	GW	1 U	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ		500 UJ		
Deep	DW-26D	5/15/2008	GW	1 U	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ		500 UJ		
Deep	DW-26D	9/28/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	4 J	2 J	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-26D	4/6/2010	GW	2.5	0.8 U	0.8 U	2 J	1 U	22	38	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-26D	9/8/2011	GW		1 J	0.8 U	36	1 U	34	8	1 U	0.8 U	11		0.5 U		
Deep	DW-26D	5/11/2012	GW		0.8 U	0.8 U	43	1 U	17	13	1 U	0.8 U	7		0.5 U		
Deep	DW-26D	5/23/2013	GW	1 U	0.8 U	0.8 U	59	1 U	10	9	3 J	0.8 J	6		0.5 U		
Deep	DW-26D	5/13/2014	GW	0.5 U	0.5 U	41	0.5 U	10	2	3	56	4			0.5 U		
Deep	DW-28S	11/8/2004	GW	45200	760	3 J	81	4 J	590	7	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	2/16/2005	GW	43100	780	2 J	73	4 J	540	3 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	5/10/2005	GW	31900	410	2 J	72	3 J	280	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	2/15/2006	GW	24000	290	2 J	73	2 J	270	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	5/12/2006	GW	13000	250	1 J	69	2 J	210	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	8/16/2006	GW	12000	150	0.9 J	65	1 J	120	0.9 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	11/16/2006	GW	8400	130	0.8 U	58	1 U	140	1 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	2/16/2007	GW	4400	100	0.8 U	64	1 U	96	1 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	9/27/2007	GW	2700	36	0.8 U	48	1 U	59	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-28S	6/2/2008	GW	640	9.6 J	5 UJ	36 J	5 UJ	27 J	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	DW-28S	9/23/2009	GW	720	11	0.8 U	40	1 U	42	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28S	3/30/2010	GW	240	5 J	0.8 U	36	1 U	23	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-28S	9/8/2011	GW	670	10	0.8 U	31	1 U	32	0.8 U	1 U	0.8 U	1 U	9.5 J	0.5 U		
Deep	DW-28S	5/23/2013	GW	530	4 J	0.8 U	25	1 U	14	0.8 U	1 U	0.8 U	1 U	17	0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-28DD	9/23/2009	GW	3.9	14	0.8 U	27	1 U	140	17	2 J	0.8 U	1 J	70 U	0.5 U	Abandon: exceeded SL for VC, with decreasing trend; within DW-13 capture zone; redundant in DW-28 cluster, with lowest total COC concentrations in this cluster.	293
Deep	DW-28DD	3/29/2010	GW	5.8 J	29	0.8 U	32	1 U	180	9	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-28DD	10/7/2010	GW	4.6	22	0.8 U	54	1 U	73	5	1 U	0.8 U	27	70 U	0.5 U		
Deep	DW-28DD	6/9/2011	GW	1.2	7	0.8 U	70	1 U	17	4 J	1 U	0.8 U	9	70 U	0.5 U		
Deep	DW-28DD	9/13/2011	GW	0.2 U	3 J	0.8 U	64	1 U	11	4 J	1 U	0.8 U	5	0.5 U			
Deep	DW-28DD	12/14/2011	GW	0.27 J	2 J	0.8 U	69	1 U	10	4 J	1 U	0.8 U	7	0.5 U			
Deep	DW-28DD	5/10/2012	GW	0.2 U	1 J	0.8 U	67	1 U	5	2 J	1 U	0.8 U	3 J	0.5 U			
Deep	DW-28DD	5/28/2013	GW	1 U	0.8 U	64	1 U	4 J	1 J	1 J	0.8 U	2 J	0.5 U				
Deep	DW-28DD	5/28/2013	GW	1 U	0.8 U	61	1 U	4 J	1 J	1 J	0.8 U	2 J	0.5 U				
Deep	DW-28DD	11/19/2013	GW	0.2 U	0.9 J	0.8 U	13	1 U	0.9 J	1 J	1 J	0.8 U	9	70 U	0.5 U		
Deep	DW-28DD	5/14/2014	GW	1 U	0.5 U	0.5 U	13	0.5 U	0.9 J	0.5 U	1	0.5 U	6	0.5 U			
Deep	DW-28DD	11/12/2014	GW	1 U	0.6 J	0.5 U	13	0.5 U	2 J	0.5 U	1	0.5 U	3	0.5 U			
Deep	DW-28DD	11/12/2014	GW	1 U	0.5 J	0.5 U	13	0.5 U	1 J	0.5 U	1	0.5 U	3	0.5 U			
Deep	DW-30I	11/9/2004	GW	72.1	54	1 J	68	1 U	300	6	1 J	0.8 U	1 U		0.5 U	Abandon: exceeds SLs for 11DCE, VC, and 1,4-dioxane, with stable to decreasing trends; redundant with downgradient detections and monitoring at DW-23 (195 ft) which has similar COC profile	140
Deep	DW-30I	2/17/2005	GW	2.8 J	66	1 J	100	2 J	340	8	1 J	0.8 U	1 J		0.5 J		
Deep	DW-30I	5/11/2005	GW	0.7 U	14	1 J	94	3 J	340	3 J	2 J	1 J	3 J		2 J		
Deep	DW-30I	5/8/2006	GW	0.21 J	2 J	0.8 U	8	1 U	43	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30I	5/22/2008	GW		100 UJ	100 UJ	72 J	100 UJ	330 J	100 UJ	100 UJ	100 UJ	100 UJ		100 UJ		
Deep	DW-30I	10/16/2009	GW	7.9	4 J	1 J	56	2 J	260	1 J	2 J	0.8 U	37	70 U	3 J		
Deep	DW-30I	10/16/2009	GW	8	5 J	1 J	58	2 J	260	1 J	2 J	0.8 U	37	70 U	3 J		
Deep	DW-30I	3/30/2010	GW	11	5 J	1 J	58	1 U	250	2 J	2 J	0.8 U	38	70 U	2 J		
Deep	DW-30I	9/1/2011	GW		2 J	0.8 U	37	1 J	190	0.8 U	1 U	0.8 U	24		1 J		
Deep	DW-30I	5/1/2012	GW		1 J	0.8 U	34	1 J	170	0.8 U	1 J	0.8 U	20		1 J		
Deep	DW-30I	5/29/2013	GW	2.6	1 J	0.8 U	36	1 U	160	0.8 U	1 U	0.8 U	23	24 j	1 J		
Deep	DW-30I	5/13/2014	GW		0.6 J	0.5 U	30	0.5 U	100	0.6 J	0.7 J	0.5 U	20	18 j	0.8 J		
Deep	DW-30I	5/15/2015	GW	0.34 J	0.5 U	0.5 U	1	0.5 U	7	0.5 U	0.5 U	0.5 U	0.5 U	0.57	0.5 U		
Deep	DW-30I	4/1/2016	GW	2	0.5 U	0.5 U	22	0.5 U	92	0.5 U	0.6 J	0.5 U	13	17	0.6 J		
Deep	DW-30I	4/19/2017	GW	1.3	0.5 U	0.5 U	25	0.5 U	77	0.5 U	0.6 J	0.5 U	15	12	0.5 J		
Deep	DW-30D	11/9/2004	GW	180	55	2 J	80	2 J	410	6	2 J	0.8 U	1 U		0.5 U	Abandon: exceeded SLs for perchlorate, 11DCE, and 1,4-dioxane in 2013 when last sampled; redundant with downgradient detections and monitoring at DW-23 (195 ft) which has similar COC profile	235
Deep	DW-30D	2/17/2005	GW	118	44	2 J	56	2 J	340	2 J	1 J	0.8 U	1 U		0.5 U		
Deep	DW-30D	5/11/2005	GW	115	35	1 J	55	2 J	340	2 J	1 J	0.8 U	1 U		0.5 U		
Deep	DW-30D	5/8/2006	GW	43	34	3 J	85	3 J	510	1 J	2 J	0.8 U	2 J		2 J		
Deep	DW-30D	6/3/2008	GW		6.4 J	5 UJ	25 J	5 UJ	220 J	5 UJ	5 UJ	5 UJ	2 J		5 UJ		
Deep	DW-30D	10/19/2009	GW	22	4 J	0.8 U	20	1 U	170	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-30D	3/30/2010	GW	22	4 J	0.8 U	19	1 U	160	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-30D	9/2/2011	GW	23	2 J	0.8 U	14	1 U	120	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-30D	5/24/2013	GW	18	1 J	0.8 U	13	1 U	84	0.8 U	1 U	0.8 U	1 U	11	0.5 U		
Deep	DW-35 Zone 1	9/24/2009	GW	0.2 U	8	0.8 U	26	1 U	68	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: redundant with downgradient monitoring within DW-13 capture zone with remaining wells; requires non-routine sampling; no longer sampled (last sampled in 2012); near injection well IW-8	58
Deep	DW-35 Zone 1	10/27/2009	GW	0.2 U	9	0.8 U	34	1 U	92	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-35 Zone 1	12/3/2009	GW	0.2 U	4 J	0.8 U	40	1 U	95	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-35 Zone 2	9/24/2009	GW	0.2 U	9	0.8 U	25	1 U	72	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 2	10/27/2009	GW	2 U	22	0.8 U	53	1 U	180	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 2	12/3/2009	GW	0.2 U	7	0.8 U	57	1 U	150	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-35 Zone 3	9/24/2009	GW	2 U	44	0.8 U	22	1 U	140	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 3	10/27/2009	GW	2 U	22	0.8 U	59	1 U	180								

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Screening Levels (SLs):																	
Deep	DW-35 Zone 4	9/24/2009	GW	0.2 U	41	0.8 U	27	1 U	160	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 4	10/27/2009	GW	2 U	11	0.8 U	60	1 U	160	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-35 Zone 4	12/3/2009	GW	1 U	38	0.8 U	33	1 U	160	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 4	2/2/2010	GW	0.2 U	41	0.8 U	31	1 U	140	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-35 Zone 4	3/2/2010	GW	2 U	30	0.8 U	40	1 U	150	0.8 U	1 U	0.8 U	7	70 U	0.5 U		
Deep	DW-35 Zone 4	4/8/2010	GW	0.22 J	28	0.8 U	36	1 U	120	0.8 U	1 U	0.8 U	9	70 U	0.5 U		
Deep	DW-35 Zone 4	6/16/2010	GW	2 U	17	0.8 U	39	1 U	72	0.8 U	1 U	0.8 U	23	70 U	0.5 U		
Deep	DW-35 Zone 4	8/10/2010	GW	2 U	13	0.8 U	55	1 U	16	0.8 U	1 U	0.8 U	28	70 U	0.5 U		
Deep	DW-35 Zone 4	10/5/2010	GW	0.2 U	11	0.8 U	61	1 U	10	0.8 U	1 U	0.8 U	16	70 U	0.5 U		
Deep	DW-35 Zone 4	12/3/2010	GW	2 U	9	0.8 U	64	1 U	11	0.8 U	1 U	0.8 U	16	70 U	0.5 U		
Deep	DW-35 Zone 4	2/2/2011	GW	2 U	4 J	0.8 U	62	1 U	7	0.8 U	1 U	0.8 U	9	70 U	0.5 U		
Deep	DW-35 Zone 5	9/24/2009	GW	16	62	0.8 U	19	1 U	190	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 5	10/27/2009	GW	0.2 U	48	0.8 U	39	1 U	180	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-35 Zone 5	12/3/2009	GW	1 U	17	0.8 U	48	1 U	140	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 5	2/2/2010	GW	2 U	19	0.8 U	46	1 U	130	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-35 Zone 5	3/2/2010	GW	2 U	10	0.8 U	59	1 U	150	0.8 U	1 U	0.8 U	9	70 U	0.5 U		
Deep	DW-35 Zone 5	4/8/2010	GW	2 U	29	0.8 U	45	1 U	150	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-35 Zone 5	6/16/2010	GW	0.2 J	4 J	0.8 U	66	1 U	23	0.8 U	1 U	0.8 U	29	70 U	0.5 U		
Deep	DW-35 Zone 5	8/10/2010	GW	2 U	2 J	0.8 U	66	1 U	5	0.8 U	1 U	0.8 U	14	70 U	0.5 U		
Deep	DW-35 Zone 5	10/5/2010	GW	0.2 U	0.8 U	0.8 U	69	1 U	3 J	0.8 U	1 U	0.8 U	8	70 U	0.5 U		
Deep	DW-35 Zone 5	12/3/2010	GW	0.2 U	1 J	0.8 U	65	1 U	4 J	0.8 U	1 U	0.8 U	11	70 U	0.5 U		
Deep	DW-35 Zone 5	2/2/2011	GW	2 U	0.8 U	0.8 U	65	1 U	0.8 U	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-35 Zone 5	5/6/2011	GW	0.2 U	0.8 U	0.8 U	67	1 U	0.8 U	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 5	9/7/2011	GW	0.22 J	0.8 U	0.8 U	89	1 U	0.8 U	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 5	12/13/2011	GW	0.22 U	0.8 U	0.8 U	70	1 U	0.8 U	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 5	5/8/2012	GW	0.3 J	0.8 U	0.8 U	100	1 U	0.8 U	0.8 U	1 U	0.8 U	5	70 U	0.5 U		
Deep	DW-35 Zone 6	9/24/2009	GW	2 U	45	0.8 U	26	1 U	180	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 6	10/27/2009	GW	0.2 U	33	0.8 U	56	1 U	240	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 6	12/3/2009	GW	1 U	26	0.8 U	45	1 U	170	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-35 Zone 7	9/24/2009	GW	0.2 U	33	0.8 U	32	1 U	180	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 7	10/27/2009	GW	0.2 U	48	0.8 U	36	1 U	180	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-35 Zone 7	12/3/2009	GW	1 U	43	0.8 U	40	1 U	190	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-35 Zone 8	9/25/2009	GW	850	73	0.8 U	28	1 U	270	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 8	10/28/2009	GW	1500	58	0.8 U	25	1 U	180	0.8 U	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW-35 Zone 8	12/3/2009	GW	1100	67	0.8 U	33	1 U	230	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 8	2/2/2010	GW	840	48	0.8 U	25	1 U	140	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 8	3/2/2010	GW	2200	52	0.8 U	32	1 U	180	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-35 Zone 8	4/8/2010	GW	560	65	0.8 U	38	1 U	230	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-35 Zone 8	6/16/2010	GW	560	57	0.8 U	41	1 U	210	0.8 U	1 U	0.8 U	13	70 U	0.5 U		
Deep	DW-35 Zone 8	8/10/2010	GW	530	68	0.8 U	40	1 U	230	0.8 U	1 U	0.8 U	8	70 U	0.5 U		
Deep	DW-35 Zone 8	10/5/2010	GW	290	83	0.8 U	43	1 U	220	0.8 U	1 U	0.8 U	11	70 U	0.5 U		
Deep	DW-35 Zone 8	12/3/2010	GW	1000	50	0.8 U	38	1 U	160	0.8 U	1 U	0.8 U	8	70 U	0.5 U		
Deep	DW-35 Zone 8	2/2/2011	GW	1000	64	0.8 U	39	1 U	170	0.8 U	1 U	0.8 U	7	70 U	0.5 U		
Deep	DW-35 Zone 8	5/6/2011	GW	1100	62	0.8 U	43	1 U	190	0.8 U	1 U	0.8 U	7	70 U	0.5 U		
Deep	DW-35 Zone 8	9/7/2011	GW	840	39	0.8 U	36	1 U	100	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-35 Zone 8	12/13/2011	GW	0.57 J	0.8 U	0.8 U	85	1 U	5 J	0.8 U	1 U	0.8 U	11	70 U	0.5 U		
Deep	DW-35 Zone 8	5/8/2012	GW	900	58	0.8 U	52	1 U									

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW-36DD	9/28/2009	GW	0.2 U	45	0.8 U	44	1 U	270	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U	Abandon: exceeds SLs for 11DCE and VC with stable to decreasing trends; within DW-13 capture zone; redundant with DW-36D (219 ft) which has similar COCs	253
Deep	DW-36DD	10/27/2009	GW	0.2 U	34	0.8 U	48	1 U	230	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-36DD	10/27/2009	GW	0.2 U	33	0.8 U	48	1 U	230	0.8 U	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW-36DD	11/23/2009	GW	0.2 U	36	0.8 U	53	1 U	270	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-36DD	1/5/2010	GW	0.2 U	33	0.8 U	49	1 U	240	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-36DD	2/3/2010	GW	2 U	36	0.8 U	52	1 U	240	0.8 U	1 U	0.8 U	3 J	70 U	0.5 U		
Deep	DW-36DD	3/3/2010	GW	2 U	12	0.8 U	57	1 U	220	0.8 U	1 U	0.8 U	5	70 U	0.5 U		
Deep	DW-36DD	4/7/2010	GW	2 U	26	0.8 U	54	1 U	230	0.8 U	1 U	0.8 U	11	70 U	0.5 U		
Deep	DW-36DD	6/16/2010	GW	0.2 U	24	0.8 U	59	1 U	110	0.8 U	1 U	0.8 U	60	70 U	0.5 U		
Deep	DW-36DD	6/16/2010	GW	0.2 U	24	0.8 U	62	1 U	110	0.8 U	1 U	0.8 U	64	70 U	0.5 U		
Deep	DW-36DD	8/10/2010	GW	2 U	51	0.8 U	49	1 U	180	0.8 U	1 U	0.8 U	28	70 U	0.5 U		
Deep	DW-36DD	10/6/2010	GW	0.2 U	65	0.8 U	57	1 U	170	0.8 U	1 U	0.8 U	39	70 U	0.5 U		
Deep	DW-36DD	12/7/2010	GW	2 U	42	0.8 U	57	1 U	120	0.8 U	1 U	0.8 U	39	70 U	0.5 U		
Deep	DW-36DD	2/3/2011	GW	2 U	40	0.8 U	61	1 U	110	0.8 U	1 U	0.8 U	34	70 U	0.5 U		
Deep	DW-36DD	6/8/2011	GW	30	34	0.8 U	67	1 U	100	0.8 U	1 U	0.8 U	30	70 U	0.5 U		
Deep	DW-36DD	9/14/2011	GW	31	20	0.8 U	57	1 U	59	0.8 U	1 U	0.8 U	19		0.5 U		
Deep	DW-36DD	12/13/2011	GW	310 J	32	0.8 U	69	1 U	93	0.8 U	1 U	0.8 U	12		0.5 U		
Deep	DW-36DD	12/13/2011	GW	150 J	32	0.8 U	67	1 U	92	0.8 U	1 U	0.8 U	11		0.5 U		
Deep	DW-36DD	2/27/2012	GW	39	53	0.8 U	53	1 U	140	0.8 U	1 U	0.8 U	15	70 U	0.5 U		
Deep	DW-36DD	5/9/2012	GW	48	45	0.8 U	54	1 U	150	0.8 U	1 U	0.8 U	10		0.5 U		
Deep	DW-36DD	8/16/2012	GW	0.98 J	27	0.8 U	65	1 U	99	0.8 U	1 U	0.8 U	14		0.5 U		
Deep	DW-36DD	11/6/2012	GW	0.2 U	0.8 U	0.8 U	68	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-36DD	5/28/2013	GW	1 U	4 J	0.8 U	89	1 U	40	1 J	1 U	0.8 U	24		0.5 U		
Deep	DW-36DD	11/19/2013	GW	0.2 U	0.8 U	0.8 U	5 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-36DD	5/13/2014	GW	1 U	0.5 U	0.5 U	26	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2		0.5 U		
Deep	DW-36DD	11/11/2014	GW	1 U	0.5 U	0.5 U	39	0.5 U	15	0.5 U	0.5 J	0.5 U	17		0.5 U		
Deep	DW-72A	5/20/2003	GW	805	46.5	1 U	6.4	1 U	196	12.8	1 U	1 U	1 U			Abandon: exceeded SLs for perchlorate, PCE, and 11DCE, 11DCE has decreasing trend; last sampled in 2014; within DW-13 capture zone and with similar COCS as DW-13; redundant with nearby monitoring at DW-23 (195 ft) with similar depth and COCs	171
Deep	DW-72A	4/5/2004	GW	1050	89	0.8 U	13	1 U	330	13	1 U	0.8 U	1 U				
Deep	DW-72A	4/20/2004	GW										5				
Deep	DW-72A	8/19/2004	GW	1420	82	0.8 U	11	1 U	350	29	1 U	0.8 U	1 U				
Deep	DW-72A	11/10/2004	GW	136	50	0.8 U	7	1 U	280	36	1 U	0.8 U	1 U				
Deep	DW-72A	2/16/2005	GW	58.3	61	0.8 U	8	1 U	260	20	1 U	0.8 U	1 U				
Deep	DW-72A	5/10/2005	GW	38.8	40	0.8 U	6	1 U	280	7	1 U	0.8 U	1 U				
Deep	DW-72A	2/15/2006	GW	34	36	0.8 U	7	1 U	260	4 J	2 J	0.8 U	1 U				
Deep	DW-72A	5/16/2006	GW	91	31	0.8 U	7	1 U	230	4 J	1 U	0.8 U	1 U				
Deep	DW-72A	8/16/2006	GW	130	24	0.8 U	7	1 U	210	3 J	1 U	0.8 U	1 U				
Deep	DW-72A	11/16/2006	GW	29	1 J	0.8 U	1 U	1 U	3 J	0.8 U	1 U	0.8 U	1 U				
Deep	DW-72A	2/20/2007	GW	170	21	0.8 U	6	1 U	190	3 J	1 U	0.8 U	1 U				
Deep	DW-72A	5/19/2008	GW		100 UJ	100 UJ	100 UJ	100 UJ	100 J	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ		
Deep	DW-72A	10/21/2009	GW	46	7	0.8 U	5	1 U	150	6	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW-72A	3/18/2010	GW	160	6	0.8 U	4 J	1 U	130	8	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-72A	9/1/2011	GW	190	3 J	0.8 U	4 J	1 U	71	24	1 U	0.8 U	1 U				
Deep	DW-72A	5/3/2012	GW	52	3 J	0.8 U	7	1 U	79	44	1 U	0.8 U	2 J				
Deep	DW-72A	5/24/2013	GW	21	3 J	0.8 U	10	1 U	66	45	1 U	0.8 U	2 J				
Deep	DW-72A	5/14/2014	GW	32	0.6 J	0.5 U	2	0.5 U	25	10	0.5 U	0.5 U	0.8 J				

Table 1 - Deep Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	IW-3	4/9/2004	GW	357	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U			
Deep	IW-3	10/21/2009	GW	0.2 U	0.8 U	0.8 U	1 J	1 U	5 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	IW-3	10/21/2009	GW	0.2 U	0.8 U	0.8 U	1 J	1 U	5 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	IW-3	3/18/2010	GW	0.2 U	0.8 U	0.8 U	1 J	1 U	5 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	IW-3	8/30/2011	GW	0.2 U													
Deep	IW-3	5/23/2013	GW	1 U	0.8 U	0.8 U	25	1 U	10	0.8 U	1 U	0.8 U	11		0.5 U		
Deep	DW-8	3/24/1987	GW		U		U		U		U			U		Abandon: ND in 1987	
Deep	DW-9	3/25/1987	GW		U		U		U		U			U		Abandon: ND in 1987 and	
Deep	DW-9	9/8/1988	GW		U		U		U		U		U		U	1988	

Notes: All wells were evaluated for potential abandonment with respect to the objectives of the approved 2015 Sampling and Analysis Plan, water level needs, if any, the general presence of stable to decreasing concentrations trends across the Site, geographic position, plume position, planned restriction against the use of ground water, planned requirement for vapor barriers as part of redevelopment, USEPA's Vapor Intrusion Screening Level calculator, and redundancy (evaluated by COCs, sample depth, and groundwater flow considerations) in meeting objectives. The evaluation of all wells utilized the most recent sampling data for each well, which is from 2017 for source, performance, and sentinel wells and from the years indicated in the "rationale summary" column for "water level" only wells under the 2015 SAP.

* The rationale for well abandonment may include reference to other wells with an indication of sampling depth in those other wells provided in parentheses.

111TCA = 1,1,1-trichloroethane

112TCA = 1,1,2-trichloroethane

11DCA = 1,1-dichloroethane

12DCA = 1,2-dichloroethane

11DCE = 1,1-dichloroethene

PCE = tetrachloroethene

TCE = trichloroethene

cis-12DCE = cis1,2-dichloroethene

VC = vinyl chloride

Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Screening Levels (SLs):																	
Shallow	SW 200-02	11/5/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Shallow	SW 200-02	5/23/2003	GW	4 U	1 U	1 U	1 U	1 U	1.1	1 U	1.1	1 U	1 U				
Shallow	SW 200-02	5/31/2008	GW	1 U	1.5 J	5 UJ	2 J	5 UJ	3.6 J	5 UJ	5 UJ	5 UJ	5 UJ			5 UJ	
Shallow	SW 200-02	7/30/2009	GW	0.2 U	0.8 J	0.8 U	1 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW 200-02	3/16/2010	GW	0.2 U	1 J	0.8 U	1 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW 200-02	9/1/2011	GW	0.2 U	1 J	0.8 U	1 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	0.53 J	0.5 U		
Shallow	SW 200-02	5/2/2012	GW	0.25 J	3 J	0.8 U	2 J	1 U	3 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 200-02	5/22/2013	GW	1 U	3 Jj	0.8 U	2 Jj	1 U	3 Jj	0.8 U	1 U	0.8 U	1 U	0.73 j	0.5 U		
Shallow	SW 200-02	5/22/2013	GW	1 U	2 J	0.8 U	2 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	0.75	0.5 U		
Shallow	SW 200-02	11/19/2013	GW	0.2 U	2 J	0.8 U	2 J	1 U	3 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW 200-02	11/19/2013	GW	0.2 U	2 J	0.8 U	2 J	1 U	3 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW 200-02	5/13/2014	GW	1 U	2	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	0.36	0.5 U		
Shallow	SW 200-02	5/13/2014	GW	1 U	2	0.5 U	1	0.5 U	2	0.5 U	0.5 J	0.5 U	0.5 U	0.35	0.5 U		
Shallow	SW 200-02	5/12/2015	GW	0.2 U	2	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	5/12/2015	GW	0.2 U	2	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	11/5/2015	GW	0.2 U	2	0.5 U	2	0.5 U	3	0.5 U	0.8 J	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	3/29/2016	GW	0.2 U	2	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	3/29/2016	GW	0.26 J	2	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	10/26/2016	GW	0.2 U	2	0.5 U	1	0.5 U	2	0.5 U	0.6 J	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	4/17/2017	GW	0.22 U	2	0.5 U	2	0.5 U	3	0.5 U	1	0.5 U	0.5 U		0.5 U		
Shallow	SW 200-02	4/17/2017	GW	0.2 U	2	0.5 U	2	0.5 U	3	0.5 U	1	0.5 U	0.5 U		0.5 U		
Shallow	SW 212-01	4/3/2003	GW		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U		5 U		
Shallow	SW 212-01	5/23/2003	GW	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Shallow	SW 212-01	3/19/2010	GW	2.9	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW 212-01	9/13/2011	GW	1.3	4 J	0.8 U	3 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.056 UJ	0.5 U		
Shallow	SW 212-01	5/3/2012	GW	0.24 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 212-01	5/23/2013	GW	1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 212-01	5/13/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 212-01	5/12/2015	GW	0.64 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 212-01	11/5/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 212-01	3/30/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 212-01	4/18/2017	GW	0.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 86-01	8/12/2008	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	4 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 86-01	7/30/2009	GW	0.73 J	0.8 U	0.8 U	2 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 86-01	7/30/2009	GW	0.93 J	0.8 U	0.8 U	2 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 86-01	3/22/2010	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 93-01	8/13/2008	GW	16	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 93-01	8/5/2009	GW	13	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 93-01	3/22/2010	GW	12	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 93-01	8/30/2011	GW	11													
Shallow	BW 200-01	6/25/2008	GW	1 U	1 J	0.8 U	29	1 U	30	0.8 U	26	3 J	1 U	70 U	0.5 U		
Shallow	BW 200-01	7/29/2009	GW	0.2 U	0.8 U	0.8 U	6	1 U	6	0.8 U	1 J	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 200-01	3/24/2010	GW	0.2 U	0.8 U	0.8 U	5	1 U	4 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 200-01	9/1/2011	GW		0.8 U	0.8 U	4 J	1 U	4 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 200-01	5/13/2014	GW		0.5 U	0.5 U	5	0.5 U	4	0.5 U	0.8 J	0.5 U	0.5 U		0.5 U		

Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth	
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)	
Shallow	BW 217-01	8/13/2008	GW	3.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for 3 years (2008-2010)	38	
Shallow	BW 217-01	7/29/2009	GW	2.5	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	BW 217-01	3/23/2010	GW	1.9	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	BW 237-01D	5/11/2006	GW	15	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		Abandon: below SLs for >3 years	25
Shallow	BW 237-01D	8/15/2006	GW	13	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW 237-01D	11/17/2006	GW	14	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW 237-01D	10/3/2007	GW	16	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW 237-01D	5/22/2008	GW	8.7 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ			
Shallow	BW 237-01D	9/2/2011	GW	12														
Shallow	BW 237-01D	5/11/2012	GW	7.2														
Shallow	BW 237-01D	5/22/2013	GW	3.4 j	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW 237-01D	5/14/2014	GW	3.5														
Shallow	BW 237-01D	5/13/2015	GW	4.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			
Shallow	BW 237-01D	3/31/2016	GW	3.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			
Shallow	BW 237-01D	4/18/2017	GW	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			
Shallow	BW NE-01S	5/11/2006	GW	14	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		Abandon: below SLs for >3 years	7
Shallow	BW NE-01S	8/15/2006	GW	0.77 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW NE-01S	11/17/2006	GW	3.2														
Shallow	BW NE-01S	9/7/2011	GW	0.3 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	BW NE-01S	5/14/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			
Shallow	DW-31I	11/12/2004	GW	4.9	0.8 U	0.8 U	1 J	1 U	3 J	3 J	1 U	0.8 U	1 U		0.5 U		Abandon: below SLs for >3 years	153
Shallow	DW-31I	2/17/2005	GW	0.7 U	9	0.8 U	1 J	1 U	15	2 J	1 U	0.8 U	1 U		0.5 U			
Shallow	DW-31I	9/28/2007	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	DW-31I	5/21/2008	GW	0.33 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ			
Shallow	DW-31I	9/2/2011	GW		0.8 U	0.8 U	1 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	DW-31I	5/14/2014	GW		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			
Shallow	SW 204-01	11/5/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U				Abandon: below SLs for >3 years	10
Shallow	SW 204-01	5/23/2003	GW	4 U	1	1 U	1 U	1 U	1 U	1 U	6.4	1 U	1 U					
Shallow	SW 204-01	5/13/2004	GW	2.4 J	1 J	0.8 U	1 U	1 U	0.8 U	0.8 U	3 J	0.8 U	1 U		0.5 U			
Shallow	SW 204-01	9/1/2011	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 204-01	5/8/2012	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 204-01	5/23/2013	GW	6.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 J	0.8 U	1 U		0.5 U			
Shallow	SW 204-01	5/13/2014	GW		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U		0.5 U			
Shallow	BW 116-01	8/13/2008	GW	63	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: exceeds for perchlorate only, with decreasing trend; redundant with downgradient monitoring	17	
Shallow	BW 116-01	8/5/2009	GW	56 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	BW 116-01	3/23/2010	GW	33	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	BW 116-01	8/30/2011	GW	43														
Shallow	BW 116-01	5/23/2013	GW	16														
Shallow	BW 212-01	8/19/2008	GW	0.2 U	3 J	0.8 U	16	1 U	23	0.8 U	15	1 J	1 U	70 U	0.5 U	Abandon: below SLs for perchlorate beginning in 2008 and for VOCs in 2014; redundant with Sentinel Well SW 212-01	62	
Shallow	BW 212-01	7/28/2009	GW	0.2 U	1 J	0.8 U	9	1 U	11	0.8 U	8	0.8 U	1 U	70 U	0.5 U			
Shallow	BW 212-01	3/22/2010	GW	0.2 U	1 J	0.8 U	13	1 U	17	0.8 U	11	1 J	1 U	70 U	0.5 U			
Shallow	BW 212-01	8/31/2011	GW		0.8 U	0.8 U	10	1 U	14	0.8 U	9	0.9 J	1 U		0.5 U			
Shallow	BW 212-01</td																	

**Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area**

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW 225-01	6/24/2008	GW	45 J	13	0.8 U	3 J	1 U	30	0.8 U	7	0.8 U	1 U	70 U	0.5 U	Abandon: exceeded SL for perchlorate, when last sampled in 2014, with decreasing trend; VOCs trended below SL by 2013; ongoing downgradient monitoring	29
Shallow	BW 225-01	7/30/2009	GW	93	10	0.8 U	3 J	1 U	26	0.8 U	6	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 225-01	3/22/2010	GW	34	4 J	0.8 U	2 J	1 U	12	0.8 U	2 J	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 225-01	8/31/2011	GW	39	5	0.8 U	3 J	1 U	16	0.8 U	4 J	0.8 U	1 U		0.5 U		
Shallow	BW 225-01	5/3/2012	GW	31	4 J	0.8 U	2 J	1 U	11	0.8 U	3 J	0.8 U	1 U		0.5 U		
Shallow	BW 225-01	5/3/2012	GW	30	4 J	0.8 U	2 J	1 U	5 J	0.8 U	3 J	0.8 U	1 U		0.5 U		
Shallow	BW 225-01	5/23/2013	GW	22	2 J	0.8 U	2 J	1 U	7	0.8 U	2 J	0.8 U	1 U		0.5 U		
Shallow	BW 225-01	5/14/2014	GW	20													
Shallow	SW 115-01S	9/1/2004	GW	40.1													
Shallow	SW 115-01S	11/4/2004	GW	14.1													
Shallow	SW 115-01S	11/22/2005	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	Abandon: below SLs for all COCs when last sampled in 2014; previously exceeded for perchlorate only, with decreasing trend; redundant with downgradient monitoring	9
Shallow	SW 115-01S	5/29/2008	GW	190	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Shallow	SW 115-01S	5/29/2008	GW	190	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Shallow	SW 115-01S	9/12/2011	GW	63	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 115-01S	12/12/2011	GW	100													
Shallow	SW 115-01S	5/9/2012	GW	17													
Shallow	SW 115-01S	5/24/2013	GW	26	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 115-01S	5/16/2014	GW	3.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 115-01S	11/12/2014	GW	15													
Deep	DW 76-01	11/25/2008	GW	2600	41	0.8 U	10	1 U	460	0.9 J	1 U	0.8 U	1 U	70 U	0.5 U	Retain and Sample	47
Deep	DW 76-01	10/13/2009	GW	2200	140	0.8 J	32	2 J	580	2 J	1 J	0.8 U	3 J	70 U	0.5 U		
Deep	DW 76-01	3/26/2010	GW	1400	210	0.8 U	20	1 J	1100	2 J	1 U	0.8 U	2 J	70 U	0.5 U		
Deep	DW 76-01	11/10/2010	GW		88	0.8 U	17	1 U	890	2 J	1 U	0.8 U	1 J	70 U	0.5 U		
Deep	DW 76-01	9/12/2011	GW	1100	74	0.8 U	20	1 J	1000	2 J	1 U	0.8 U	1 J	24 J	0.5 U		
Deep	DW 76-01	5/1/2012	GW		69	0.8 U	17	1 J	1000	2 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW 76-01	5/29/2013	GW	1200	81	0.8 U	16	1 J	900	2 J	1 U	0.8 U	1 U	31 j	0.5 U		
Deep	DW 76-01	5/15/2014	GW	1500	580	0.9 J	29	2	1200	3	1	0.5 U	2	62	0.5 U		
Deep	DW 76-01	5/13/2015	GW	1600	240	1 U	17	1 U	890	1 J	1 U	1 U	1 U	68	1 U		
Deep	DW 76-01	3/31/2016	GW	1400	120	0.5 U	15	1	710	2	0.7 J	0.5 U	0.7 J	40	0.5 U		
Deep	DW 76-01	4/19/2017	GW	1500	640	0.5 U	21	0.8 J	1700	2	1	0.5 U	0.5 U	13	0.5 U		
Deep	DW 200-01	6/23/2008	GW	1 U	0.8 U	0.8 U	1 U		0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Retain and Sample - Sentinel Well	Artesian
Deep	DW 200-01	10/14/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 200-01	3/23/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 200-01	9/2/2011	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.048 UJ	0.5 U		
Deep	DW 200-01	5/3/2012	GW	0.79 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW 200-01	5/29/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.051 U	0.5 U		
Deep	DW 200-01	11/18/2013	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 200-01	5/18/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.073 J	0.5 U		
Deep	DW 200-01	5/13/2015	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	3	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 200-01	11/5/2015	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	3	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 200-01	3/30/2016	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	5	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 200-01	10/27/2016	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 200-01	4/18/2017	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	0.8 J	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		

Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Deep	DW 213-01	8/14/2008	GW	49	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 213-01	10/8/2009	GW	58	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 213-01	3/23/2010	GW	39	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW 213-01	9/1/2011	GW	45													
Deep	DW 213-01	5/7/2012	GW	43													
Deep	DW 213-01	5/21/2013	GW	43	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	Retain and Sample	114
Deep	DW 213-01	5/15/2014	GW	44													
Deep	DW 213-01	5/14/2015	GW	54	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 213-01	3/29/2016	GW	52	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW 213-01	4/18/2017	GW	56	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	BW NE-01D	5/11/2006	GW	6	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	BW NE-01D	8/15/2006	GW	1.9	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	BW NE-01D	11/17/2006	GW	0.7 J												Retain for water levels only; below SLs for all COCs for >3 years	20
Deep	BW NE-01D	9/6/2011	GW	0.42 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	BW NE-01D	5/29/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	BW NE-01D	5/14/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW SB-02	9/4/2009	GW	2 U	0.8 U	0.8 U	4 J	1 U	11	0.8 J	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-02	3/23/2010	GW	0.2 U	0.8 U	0.8 U	4 J	1 U	11	0.8 U	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-02	4/5/2011	GW		0.8 U	0.8 U	4 J	1 U	10	0.8 U	1 J	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-02	9/1/2011	GW	0.2 U	0.8 U	0.8 U	4 J	1 U	11	0.8 U	1 U	0.8 U	1 U	0.19 J	0.5 U		
Deep	DW SB-02	12/12/2011	GW		0.8 U	0.8 U	3 J	1 U	10	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW SB-02	5/1/2012	GW	0.2 U	0.8 U	0.8 U	4 J	1 U	11	0.9 J	1 J	0.8 U	1 U		0.5 U		
Deep	DW SB-02	11/7/2012	GW		0.8 U	0.8 U	4 J	1 U	11	0.8 U	1 J	0.8 U	1 U		0.5 U		
Deep	DW SB-02	5/28/2013	GW	1 U	0.8 U	0.8 U	4 J	1 U	11	0.8 U	1 U	0.8 U	1 U	0.37	0.5 U		
Deep	DW SB-02	11/18/2013	GW	0.2 U	0.8 U	0.8 U	3 J	1 U	8	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW SB-02	5/19/2014	GW	1 U	0.5 U	0.5 U	4	0.5 U	10	0.5 J	0.9 J	0.5 U	0.5 U	0.29	0.5 U		
Deep	DW SB-02	11/11/2014	GW		0.5 U	0.5 U	4	0.5 U	9	0.6 J	1 J	0.5 U	0.5 U		0.5 U		
Deep	DW SB-02	5/12/2015	GW	0.2 U	0.5 U	0.5 U	3	0.5 U	8	0.6 J	0.8 J	0.5 U	0.5 U	0.32	0.5 U		
Deep	DW SB-02	5/12/2015	GW	0.2 U	0.5 U	0.5 U	3	0.5 U	8	0.5 J	0.8 J	0.5 U	0.5 U	0.29	0.5 U		
Deep	DW SB-02	11/5/2015	GW	0.2 U	0.5 U	0.5 U	4	0.5 U	11	0.5 U	1	0.5 U	0.5 U		0.5 U		
Deep	DW SB-02	3/29/2016	GW	0.2 U	0.5 U	0.5 U	5	0.5 U	10	0.5 U	1	0.5 U	0.5 U	0.34	0.5 U		
Deep	DW SB-02	3/29/2016	GW	0.2 U	0.5 U	0.5 U	5	0.5 U	11	0.5 U	1	0.5 U	0.5 U	0.35	0.5 U		
Deep	DW SB-02	10/27/2016	GW	0.2 U	0.5 U	0.5 U	5	0.5 U	11	0.5 U	0.7 J	0.5 U	0.5 U		0.5 U		
Deep	DW SB-02	4/18/2017	GW	0.2 U	0.5 U	0.5 U	4	0.5 U	9	0.5 U	0.9 J	0.5 U	0.5 U	2.4 u	0.5 U		
Deep	DW SB-02	4/18/2017	GW	0.2 U	0.5 U	0.5 U	4	0.5 U	9	0.5 U	0.9 J	0.5 U	0.5 U	6.9 u	0.5 U		

Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth		
					15	200	5	140	5	7	5	5	70	2	7.8	5			
																	(ft)		
Screening Levels (SLs):																			
Deep	BW 90-01	8/12/2008	GW	6.3	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for 3 years	70		
Deep	BW 90-01	7/28/2009	GW	3.5															
Deep	BW 90-01	10/14/2009	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	BW 90-01	3/22/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	BW 90-01	3/22/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	BW 90-01	5/23/2013	GW	1 U															
Deep	DW-2	5/17/2002	GW		-9999 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U						
Deep	DW-2	5/21/2003	GW	17.8	1.5	1 U	1.1	1 U	1 U	1 U	1 U	1 U	1 U						
Deep	DW-2	4/23/2004	GW	6.5 J	0.9 J	0.8 U	1 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW-2	11/16/2006	GW	390	0.8 U	0.8 U	1 J	1 U	4 J	3 J	1 U	0.8 U	1 U			0.5 U			
Deep	DW-2	2/16/2007	GW	0.3 J															
Deep	DW-2	9/27/2007	GW	0.3 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW-2	5/15/2008	GW	0.93 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ			5 UJ			
Deep	DW-2	10/21/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-2	3/18/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-2	5/22/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW-2	5/14/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8 J	0.5 U			0.5 U		
Deep	DW-2	3/29/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					0.5 U	
Deep	DW-2	4/17/2017	GW	0.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					0.5 U	
Deep	DW-10	4/6/2004	GW	3 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	Abandon: below SLs for >3 years, when last sampled in 2013	190	
Deep	DW-10	8/14/2008	GW	12	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-10	8/14/2008	GW	12	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-10	10/21/2009	GW	13	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-10	3/18/2010	GW	4	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW-10	5/21/2013	GW	7.3	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	BW 78-11D	3/3/2005	GW	399													Abandon: exceeds SL for perchlorate only; redundant with nearby wells and ongoing downgradient monitoring	17	
Deep	BW 78-11D	3/31/2010	GW	38	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	BW 78-11D	9/8/2011	GW	32	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	BW 78-11D	5/15/2012	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	BW 78-11D	5/30/2013	GW	35	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	BW 78-11D	5/15/2014	GW	45	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			0.5 U			
Deep	DW 85-01	8/14/2008	GW	26	0.8 U	0.8 U	1 U	1 U	0.9 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for all COCs in 2013 and 2014; also below for all COCs in 2011 except for perchlorate in a duplicate sample	73		
Deep	DW 85-01	10/9/2009	GW	21	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW 85-01	3/22/2010	GW	19	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U				
Deep	DW 85-01	8/30/2011	GW	12	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW 85-01	8/30/2011	GW	16	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW 85-01	5/28/2013	GW	7.9	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U			
Deep	DW 85-01	5/15/2014	GW	4.6															

Table 2 - Deep and Shallow Groundwater Historical Results and Well Abandonment Rationale
Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale*	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Screening Levels (SLs):																	
Deep	DW-22	4/7/2004	GW	617	4 J	0.8 U	1 U	1 U	10	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-22	5/9/2006	GW	1.2	2 J	0.8 U	2 J	1 U	8	6	1 U	0.8 U	1 U		0.5 U		
Deep	DW-22	2/19/2007	GW	0.5 J	0.8 U	0.8 U	5 J	1 U	5 J	2 J	1 U	1 J	3 J		0.5 U		
Deep	DW-22	9/28/2009	GW	0.2 U	12	0.8 U	49	1 U	190	0.8 U	1 U	0.8 U	4 J	70 U	0.5 U		
Deep	DW-22	2/3/2010	GW	2 U	11	0.8 U	61	1 U	190	0.8 U	1 U	0.8 U	17	70 U	0.5 U		
Deep	DW-22	4/6/2010	GW	23	5 J	0.8 U	55	1 U	160	0.8 U	1 U	0.8 U	17	70 U	0.5 U		
Deep	DW-22	6/16/2010	GW	0.2 U	3 J	0.8 U	61	1 U	94	0.8 U	1 U	0.8 U	45	70 U	0.5 U		
Deep	DW-22	8/10/2010	GW	0.2 U	2 J	0.8 U	61	1 U	17	0.8 U	1 U	0.8 U	15	70 U	0.5 U		
Deep	DW-22	8/10/2010	GW	2 U	2 J	0.8 U	62	1 U	18	0.8 U	1 U	0.8 U	15	70 U	0.5 U		
Deep	DW-22	10/6/2010	GW	0.2 U	0.8 U	0.8 U	70	1 U	13	0.8 U	1 U	0.8 U	11	70 U	0.5 U		
Deep	DW-22	12/6/2010	GW	0.2 U	0.8 U	0.8 U	72	1 U	10	0.8 U	1 U	0.8 U	8	70 U	0.5 U		
Deep	DW-22	2/3/2011	GW	2 U	0.8 U	0.8 U	70	1 U	9	0.8 U	1 U	0.8 U	6	70 U	0.5 U		
Deep	DW-22	6/9/2011	GW	0.2 U	0.8 U	0.8 U	74	1 U	7	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-22	6/9/2011	GW	0.2 U	0.8 U	0.8 U	75	1 U	7	0.8 U	1 U	0.8 U	5 J	70 U	0.5 U		
Deep	DW-22	9/13/2011	GW	0.2 U	0.8 U	0.8 U	68	1 U	4 J	0.8 U	1 U	0.8 U	3 J		0.5 U		
Deep	DW-22	12/13/2011	GW	0.2 U	0.8 U	0.8 U	76	1 U	4 J	0.8 U	1 U	0.8 U	5		0.5 U		
Deep	DW-22	5/9/2012	GW	0.2 U	0.8 U	0.8 U	76	1 U	4 J	0.8 U	1 U	0.8 U	3 J		0.5 U		
Deep	DW-22	11/6/2012	GW	0.2 U	0.8 U	0.8 U	74	1 U	2 J	0.8 U	1 U	0.8 U	3 J		0.5 U		
Deep	DW-22	5/28/2013	GW	1 U	0.8 U	0.8 U	70	1 U	3 J	0.8 U	1 U	0.8 U	3 J		0.5 U		
Deep	DW-22	11/19/2013	GW	290	0.8 U	0.8 U	4 J	1 U	4 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Deep	DW-22	5/14/2014	GW	170	0.5 U	0.5 U	14	0.5 U	5	0.5 U	0.5 U	0.5 U	0.9 J		0.5 U		
Deep	DW-22	11/11/2014	GW	2.7	0.5 U	0.5 U	39	0.5 U	2	0.5 U	0.5 U	0.5 U	3		0.5 U		
Deep	DW-31D	11/12/2004	GW	0.7 U	1 J	0.8 U	2 J	1 U	6	4 J	1 U	0.8 U	1 U		0.5 U		
Deep	DW-31D	2/17/2005	GW	0.7 U	3 J	0.8 U	2 J	1 U	21	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-31D	6/3/2008	GW		5 UJ	5 UJ	1.2 J	5 UJ	2.4 J	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ		
Deep	DW-31D	9/8/2011	GW	0.2 U	0.8 U	0.8 U	2 J	1 U	5 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-31D	5/1/2012	GW		0.8 U	0.8 U	3 J	1 U	8	0.8 U	1 U	0.8 U	1 U		0.5 U		
Deep	DW-31D	5/24/2013	GW	1 U	0.8 U	0.8 U	2 J	1 U	5 J	0.8 U	1 U	0.8 U	1 U	0.39	0.5 U		
Deep	DW-31D	5/14/2014	GW	1 U	0.5 U	0.5 U	2	0.5 U	6	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-31D	5/14/2015	GW	0.45 J	0.5 U	0.5 U	2	0.5 U	4	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-31D	3/30/2016	GW	0.2 U	0.5 U	0.5 U	5	0.5 U	8	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Deep	DW-31D	4/18/2017	GW	0.2 U	0.5 U	0.5 U	1	0.5 U	3	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		

Notes: All wells were evaluated for potential abandonment with respect to the objectives of the approved 2015 Sampling and Analysis Plan, water level needs, if any, the general presence of stable to decreasing concentrations trends across the Site, geographic position, plume position, planned restriction against the use of ground water, planned requirement for vapor barriers as part of redevelopment, USEPA's Vapor Intrusion Screening Level calculator, and redundancy (evaluated by COCs, sample depth, and groundwater flow considerations) in meeting objectives. The evaluation of all wells utilized the most recent sampling data for each well, which is from 2017 for source, performance, and sentinel wells and from the years indicated in the "rationale summary" column for "water level" only wells under the 2015 SAP.

* The rationale for well abandonment may include reference to other wells with an indication of sampling depth in those other wells provided in parentheses.

111TCA = 1,1,1-trichlorethane

112TCA = 1,1,2-trichlorethane

11DCA = 1,1-dichlorethane

12DCA = 1,2-dichlorethane

11DCE = 1,1-dichlorethene

PCE = tetrachloroethene

TCE = trichloroethene

cis-12DCE = cis1,2-dichloroethene

VC = vinyl chloride

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW 14-02S	11/9/2004	GW	4650	19	0.8 U	2 J	1 U	10	82	6	7	1 U		0.5 U		
Shallow	BW 14-02S	3/3/2005	GW	7740	31	0.8 U	5 J	1 U	14	130	11	11	1 U		0.5 U		
Shallow	BW 14-02S	5/9/2006	GW	11000	49	0.8 U	6	1 U	27	270	17	22	1 U		0.5 U		
Shallow	BW 14-02S	7/29/2009	GW	2700	29	0.8 U	3 J	1 U	15	300	37	34	1 U	70 U	0.5 U		
Shallow	BW 14-02S	3/29/2010	GW	2800	34 J	0.8 U	3 J	1 U	14	310 J	35	30	1 U	70 U	0.5 U		
Shallow	BW 14-02S	11/10/2010	GW		27	0.8 U	2 J	1 U	10	230	26	24	1 U	70 U	0.5 U		
Shallow	BW 14-02S	9/14/2011	GW	2800	27	0.8 U	3 J	1 U	11	240	27	25	1 U		0.5 U		
Shallow	BW 14-02S	5/2/2012	GW	2700	34	0.8 U	3 J	1 U	14	290	33	28	1 U		0.5 U		
Shallow	BW 14-02S	5/2/2012	GW	2700	39	0.8 U	3 J	1 U	13	300	33	32	1 U		0.5 U		
Shallow	BW 14-02S	5/30/2013	GW	2500	40	0.8 U	3 J	1 U	16	250	27	24	1 U		0.5 U		
Shallow	BW 14-02S	5/16/2014	GW	2500	24	0.5 U	2	0.5 U	11	260	24	21	0.5 U		0.5 U		
Shallow	BW 14-02S	5/14/2015	GW	2200	26	0.5 U	2	0.5 U	11	300	29	22	0.5 U		0.5 U		
Shallow	BW 14-02S	4/1/2016	GW	1600	17	0.5 U	1	0.5 U	8	290	29	22	0.5 U		0.5 U		
Shallow	BW 14-02S	4/19/2017	GW	1100	13	0.5 U	1	0.5 U	6	240	26	19	0.5 U		0.5 U		
Shallow	BW 21-04D	11/9/2004	GW	27600	0.8 J	0.8 U	5 J	1 U	4 J	9	2 J	7	1 U		0.5 U		
Shallow	BW 21-04D	3/2/2005	GW	356	0.8 U	0.8 U	10	1 U	0.8 U	1 J	1 U	3 J	1 U		0.5 U		
Shallow	BW 21-04D	5/17/2005	GW	451													
Shallow	BW 21-04D	11/22/2005	GW	1800													
Shallow	BW 21-04D	5/9/2006	GW	3400													
Shallow	BW 21-04D	10/2/2007	GW	6700	0.8 U	0.8 U	2 J	1 U	0.8 U	1 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 21-04D	9/14/2011	GW	1800	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 21-04D	5/14/2012	GW	1500													
Shallow	BW 21-04D	5/30/2013	GW	420													
Shallow	BW 21-04D	5/16/2014	GW	250	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 21-04D	5/15/2015	GW	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7 J	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 21-04D	3/31/2016	GW	240	1	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 21-04D	4/19/2017	GW	140	4	0.5 U	0.5 U	0.5 U	0.5 U	0.7 J	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 28-02S	6/29/2005	GW	3410	22	0.8 U	6	1 U	25	150	52	21	1 U		0.5 U		
Shallow	BW 28-02S	5/9/2006	GW	3300	17	0.8 U	5	1 U	21	130	49	15	1 U		0.5 U		
Shallow	BW 28-02S	7/28/2009	GW	6100 J	13	0.8 U	4 J	1 U	17	140	25	11 J	1 U	92 J	0.5 U		
Shallow	BW 28-02S	3/16/2010	GW	6000	14	0.8 U	4 J	1 U	19	140	22	11	1 U	80 J	0.5 U		
Shallow	BW 28-02S	9/8/2011	GW	5700	16	0.8 U	3 J	1 U	15	150	20	11	1 U	36 J	0.5 U		
Shallow	BW 28-02S	5/9/2012	GW	2800	14	0.8 U	3 J	1 U	17	190	20	13	1 U		0.5 U		
Shallow	BW 28-02S	5/28/2013	GW	3600	13	0.8 U	3 J	1 U	16	200	20	15	1 U	34 j	0.5 U		
Shallow	BW 28-02S	5/17/2014	GW	2900	13	0.5 U	3	0.5 U	12	190	19	14	0.5 U	28	0.5 U		
Shallow	BW 28-02S	5/14/2015	GW	2800	11	0.5 U	2	0.5 U	10	180	16	14	0.5 U	22	0.5 U		
Shallow	BW 28-02S	4/1/2016	GW	3800	12	0.5 U	2	0.5 U	12	160	14	13	0.5 U	18	0.5 U		
Shallow	BW 28-02S	4/20/2017	GW	3100	11	0.5 U	2	0.5 U	11	170	13	13	0.5 U	4.3	0.5 U		
Shallow	BW 28-04D	11/21/2005	GW	620	94	0.8 U	7	1 U	42	50	4 J	21	1 U		0.5 U		
Shallow	BW 28-04D	5/10/2006	GW		100	0.8 U	9	1 U	47	140	15	19	1 U		0.5 U		
Shallow	BW 28-04D	8/12/2009	GW	350	71	0.8 U	7	1 U	42	95	17	8	1 U	70 U	0.5 U		
Shallow	BW 28-04D	3/16/2010	GW	270	52	0.8 U	5	1 U	36	150	16	6	1 U	70 U	0.5 U		
Shallow	BW 28-04D	9/8/2011	GW	420	63	0.8 U	6	1 U	36	65	8	4 J	1 U		0.5 U		
Shallow	BW 28-04D	5/11/2012	GW	270	42	0.8 U	4 J	1 U	35	130	18	6	1 U		0.5 U		
Shallow	BW 28-04D	5/28/2013	GW	530	40	0.8 U	4 J	1 U	38	64	5 J	3 J	1 U		0.5 U		
Shallow	BW 28-04D	5/15/2014	GW		24	0.5 U	3	0.5 U	25	55	5	3	0.5 U		0.5 U		
Shallow	BW 28-04D	5/13/2015	GW	150	11	0.5 U	2	0.5 U	12	42	1	1	0.5 U		0.5 U		
Shallow	BW 28-04D	3/30/2016	GW	320	15	0.5 U	2	0.5 U	14	70	3	2	0.5 U		0.5 U		
Shallow	BW 28-04D	4/18/2017	GW	5													

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW 45-03S	11/29/2005	GW	0.52 J	0.8 U	0.8 U	42	1 U	17	82	23	17	1 U		0.5 U	Retain and Sample	6
Shallow	BW 45-03S	5/16/2006	GW		2 J	0.8 U	2 J	1 U	1 J	270	120	85	2 J		0.5 U		
Shallow	BW 45-03S	8/12/2009	GW	88	0.8 U	0.8 U	2 J	1 U	1 J	260	33	150	4 J	70 U	0.5 U		
Shallow	BW 45-03S	3/17/2010	GW	33	0.8 U	0.8 U	2 J	1 U	1 J	250	32	130	4 J	70 U	0.5 U		
Shallow	BW 45-03S	9/7/2011	GW	10	0.8 U	0.8 U	2 J	1 U	1 J	210	28	150	5 J		0.5 U		
Shallow	BW 45-03S	5/7/2012	GW	7.6	0.8 U	0.8 U	2 J	1 U	1 J	230	33	120	4 J		0.5 U		
Shallow	BW 45-03S	11/9/2012	GW		0.8 U	0.8 U	2 J	1 U	1 J	220	36	180	2 J		0.5 U		
Shallow	BW 45-03S	5/29/2013	GW	10	0.8 U	0.8 U	2 J	1 U	1 J	270	46	160	4 J		0.5 U		
Shallow	BW 45-03S	11/21/2013	GW	4	0.8 U	0.8 U	2 J	1 U	1 J	260	42	180	4 J	70 U	0.5 U		
Shallow	BW 45-03S	5/18/2014	GW	9.5	0.5 U	0.5 U	2	0.5 U	0.9 J	280	47	160	5		0.5 U		
Shallow	BW 45-03S	5/15/2015	GW	9.2	0.5 U	0.5 U	1	0.5 U	1	240	41	190	5		0.5 U		
Shallow	BW 45-03S	3/30/2016	GW	2.8	0.5 U	0.5 U	1	0.5 U	0.5 U	300	40	160	4		0.5 U		
Shallow	BW 45-03S	4/18/2017	GW	1	0.5 U	0.5 U	1	0.5 U	0.5 U	240	30	130	3		0.5 U		
Shallow	BW 79-02S	11/22/2005	GW	30	300	0.8 U	15	1 U	76	0.8 U	1 U	0.8 U	1 U		0.5 U	Retain and Sample	10
Shallow	BW 79-02S	5/15/2006	GW	28	380	0.8 U	14	1 U	83	0.8 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 79-02S	9/7/2011	GW	11	420	0.8 U	22	1 U	120	0.8 U	1 U	0.8 U	1 U	2.6 J	0.5 U		
Shallow	BW 79-02S	5/15/2012	GW		310	0.8 U	18	1 U	110	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 79-02S	11/8/2012	GW		410	0.8 U	23	1 U	120	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 79-02S	5/30/2013	GW	7.4	610	0.8 U	30	1 U	150	0.8 U	1 U	0.8 U	1 U	3.2	0.5 U		
Shallow	BW 79-02S	5/16/2014	GW	6.8	380	0.5 U	23	0.5 U	110	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 79-02S	5/13/2015	GW	6.5	330	0.5 U	20	0.5 U	110	1	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 79-02S	3/30/2016	GW	5.9	440	0.5 U	25	0.5 U	110	0.6 J	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 79-02S	4/19/2017	GW	6.1	480	0.5 U	29	0.5 U	160	1	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW CG-01D	5/11/2006	GW	22000	2 J	0.8 U	42	1 U	4 J	62	1 J	5 J	1 U		0.5 U	Retain and Sample	32
Shallow	BW CG-01D	8/25/2006	GW	43000	2 J	0.8 U	45	1 U	5	39	1 J	6	1 U		0.5 U		
Shallow	BW CG-01D	11/17/2006	GW	38000	380	0.8 U	49	1 U	5	17	4 J	15	1 U		0.5 U		
Shallow	BW CG-01D	10/1/2007	GW	19000	2 J	0.8 U	74	1 U	9	21	1 J	4 J	1 U		1 J		
Shallow	BW CG-01D	5/23/2008	GW	25000	100 UJ	100 UJ	75 J	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ		100 UJ	
Shallow	BW CG-01D	8/11/2009	GW	24000	1 J	0.8 U	100	1 U	10	28	2 J	7	1 U	70 U	2 J		
Shallow	BW CG-01D	3/31/2010	GW	16000	0.8 U	0.8 U	61	1 U	5	49	1 J	5	1 U	70 U	0.9 J		
Shallow	BW CG-01D	9/9/2011	GW	12000	0.8 U	0.8 U	76	1 U	5	13	1 J	4 J	1 U	9.2 J	2 J		
Shallow	BW CG-01D	9/9/2011	GW	11000	0.8 U	0.8 U	75	1 U	5	13	1 U	4 J	1 U	8.8 J	2 J		
Shallow	BW CG-01D	5/10/2012	GW		0.8 U	0.8 U	26	1 U	0.8 U	8	1 U	1 J	1 U		0.6 J		
Shallow	BW CG-01D	5/30/2013	GW	18000	0.8 U	0.8 U	41	1 U	0.8 U	9	1 J	4 J	1 U	6.5 j	1 J		
Shallow	BW CG-01D	5/30/2013	GW	17000	0.8 U	0.8 U	40	1 U	0.8 U	8	1 J	4 J	1 U	6.3	0.9 J		
Shallow	BW CG-01D	5/15/2014	GW	11000	0.5 U	0.5 U	21	0.5 U	2	11	1	3	0.5 U		0.5 J		
Shallow	BW CG-01D	5/15/2015	GW	5100	0.5 U	0.5 U	13	0.5 U	0.5 U	8	1	3	0.5 U		0.5 U		
Shallow	BW CG-01D	4/1/2016	GW	3700	0.5 U	0.5 U	9	0.5 U	3	5	0.8 J	2	0.5 U		0.5 U		
Shallow	BW CG-01D	4/20/2017	GW	2400	0.5 U	0.5 U	5	0.5 U	0.5 U	2	0.5 U	1	0.5 U		0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW CM-01S	6/30/2005	GW	32700	8	0.8 U	10	1 U	12	96	1 J	12	1 U		0.5 U	Retain and Sample	17
Shallow	BW CM-01S	5/15/2006	GW	11000	29	0.8 U	13	1 U	29	260	4 J	33	1 U		0.5 U		
Shallow	BW CM-01S	5/15/2006	GW		29	0.8 U	13	1 U	29	260	4 J	33	1 U		0.5 U		
Shallow	BW CM-01S	8/15/2006	GW	68000	43	0.8 U	18	1 U	40	290	6	51	1 U		0.5 U		
Shallow	BW CM-01S	11/17/2006	GW	52000													
Shallow	BW CM-01S	10/2/2007	GW	29000	24	0.8 U	11	1 U	19	280	3 J	25	1 U		0.5 U		
Shallow	BW CM-01S	5/23/2008	GW	30000	18 J	50 UJ	50 UJ	50 UJ	19 J	260 J	50 UJ	33 J	50 UJ		50 UJ		
Shallow	BW CM-01S	8/11/2009	GW	42000	20	0.8 U	11	1 U	26	270	5 J	45	1 U	70 U	0.5 U		
Shallow	BW CM-01S	3/31/2010	GW	29000	17	0.8 U	10	1 U	23	230	4 J	38	1 U	70 U	0.5 U		
Shallow	BW CM-01S	9/8/2011	GW	190	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW CM-01S	4/3/2012	GW	6900	1 J	0.8 U	3 J	1 U	3 J	44	1 U	5 J	1 U		0.5 U		
Shallow	BW CM-01S	5/31/2013	GW	4800	0.8 U	0.8 U	2 J	1 U	2 J	23	1 U	2 J	1 U		0.5 U		
Shallow	BW CM-01S	5/15/2014	GW	2400	0.5 J	0.5 U	2	0.5 U	2	24	0.5 U	2	0.5 U		0.5 U		
Shallow	BW CM-01S	5/14/2015	GW	5800	0.8 J	0.5 U	2	0.5 U	3	42	0.7 J	4	0.5 U		0.5 U		
Shallow	BW CM-01S	4/1/2016	GW	4200	0.6 J	0.5 U	3	0.5 U	3	35	0.5 U	4	0.5 U		0.5 U		
Shallow	BW CM-01S	4/19/2017	GW	2000	0.5 U	0.5 U	1	0.5 U	0.5 U	12	0.5 U	1	0.5 U		0.5 U		
Shallow	BW TTU-03D	11/29/2005	GW	1000	13	2 U	14	3 U	11 J	2200	1100	2000	19		2 J	Retain and Sample	20
Shallow	BW TTU-03D	5/15/2006	GW	110	9	0.8 U	15	1 U	12	810	860	2200	32		2 J		
Shallow	BW TTU-03D	11/17/2006	GW		170	2 U	12	2 U	11	680	690	1700	26		2 J		
Shallow	BW TTU-03D	5/30/2008	GW	63 J	250 UJ	250 UJ	250 UJ	250 UJ	250 UJ	390 J	350 J	920 J	250 UJ		250 UJ		
Shallow	BW TTU-03D	8/13/2009	GW	200	1 J	0.8 U	4 J	1 U	4 J	610	280	790	31	70 U	0.9 J		
Shallow	BW TTU-03D	8/13/2009	GW	200	1 J	0.8 U	4 J	1 U	4 J	610	270	810	34	70 U	0.9 J		
Shallow	BW TTU-03D	3/31/2010	GW	140	2 J	2 U	4 J	2 U	2 U	1400	500	460	14	140 U	1 U		
Shallow	BW TTU-03D	9/13/2011	GW	270	2 J	0.8 U	4 J	1 U	3 J	620	170	300	11		1 J		
Shallow	BW TTU-03D	4/4/2012	GW	290	2 J	0.8 U	4 J	1 U	3 J	790	160	260	8		1 J		
Shallow	BW TTU-03D	5/28/2013	GW	73	0.8 U	0.8 U	2 J	1 U	1 J	360	100	270	2 J		0.5 U		
Shallow	BW TTU-03D	5/15/2014	GW	800	0.5 U	0.5 U	0.9 J	0.5 U	0.6 J	170	120	130	3		0.5 U		
Shallow	BW TTU-03D	5/14/2015	GW	71	0.5 U	0.5 U	0.7 J	0.5 U	0.5 J	330	94	100	2		0.5 U		
Shallow	BW TTU-03D	4/1/2016	GW	41	0.5 U	0.5 U	0.6 J	0.5 U	0.7 J	290	88	170	3		0.5 U		
Shallow	BW TTU-03D	4/4/2012	GW	300	2 J	0.8 U	4 J	1 U	3 J	750	170	270	8		1 J		
Shallow	BW TTU-03D	4/20/2017	GW	87	2	0.5 U	0.6 J	0.5 U	1	1900	230	130	5		0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	SW 5-04	2/4/2004	GW		45833 J	28.1 J	106 J	22.6 J	266 J	34.5 J	35.6 J	2.7 J	1 UJ			Retain and sample	16
Shallow	SW 5-04	5/6/2004	GW	117	140000	80 U	170 J	100 U	530	80 U	110 J	80 U	100 U				
Shallow	SW 5-04	8/18/2004	GW	329	110000	80 U	160 J	100 U	550	80 U	100 U	80 U	100 U				
Shallow	SW 5-04	11/2/2004	GW	331	120000	160 U	270 J	200 U	1400	160 U	200 U	160 U	200 U				
Shallow	SW 5-04	2/23/2005	GW	405	120000	40	240 J	36	1300	32	89	6	1 U				
Shallow	SW 5-04	5/17/2005	GW		44000	80 U	340 J	100 U	360 J	80 U	100 U	80 U	100 U				
Shallow	SW 5-04	11/22/2005	GW		69000	80 U	120 J	100 U	620	80 U	100 U	80 U	100 U				
Shallow	SW 5-04	5/15/2006	GW		800000	400 U	600 J	500 U	2100 J	400 U	500 U	400 U	500 U				
Shallow	SW 5-04	11/16/2006	GW		81000	30 J	370	25 U	580	60 J	66 J	20 U	25 U				
Shallow	SW 5-04	4/23/2008	GW											6			
Shallow	SW 5-04	8/3/2009	GW		170000	160 U	630 J	200 U	2600	160 U	200 U	160 U	200 U	14000 U	100 U		
Shallow	SW 5-04	8/4/2009	GW	800													
Shallow	SW 5-04	3/29/2010	GW	570	16000	16 U	46 J	20 U	160	130	27 J	16 U	20 U	1400 U	10 U		
Shallow	SW 5-04	11/11/2010	GW	370													
Shallow	SW 5-04	9/9/2011	GW	360	370000	160 U	2100	200 U	5300	160 U	240 J	160 U	200 U	2.4 J	100 U		
Shallow	SW 5-04	9/9/2011	GW	420	310000	80 U	2100	100 U	5900	210 J	240 J	80 U	100 U	2.3 J	50 U		
Shallow	SW 5-04	12/12/2011	GW	770													
Shallow	SW 5-04	4/4/2012	GW	410	21000	4 J	300	1 U	220	120	33	10	1 U		0.5 U		
Shallow	SW 5-04	11/9/2012	GW	480	32000	40 U	720	50 U	540	98 J	50 U	40 U	50 U		25 U		
Shallow	SW 5-04	5/31/2013	GW	450	200000	80 U	1600	100 U	3000	80 U	140 J	80 U	100 U	3	50 U		
Shallow	SW 5-04	11/20/2013	GW	400	60000	40 U	180 J	50 U	580	88 J	55 J	40 U	50 U	3500 U	25 U		
Shallow	SW 5-04	5/19/2014	GW	460	10000	10 U	33	10 U	210	98	22	10 U	10 U		10 U		
Shallow	SW 5-04	11/11/2014	GW	410													
Shallow	SW 5-04	5/15/2015	GW	420	7600	3 U	9	3 U	82	110	23	8	3 U		3 U		
Shallow	SW 5-04	3/30/2016	GW	350	12000	5 U	51	5 U	180	90	23	5 J	5 U		5 U		
Shallow	SW 5-04	4/18/2017	GW	310	15000	5 U	110	5 U	1700	190	41	12	5 U		5 U		
Shallow	SW 28-41	5/19/2002	GW		52.2	1 U	6.4	1 U	16.3	75	11.4	7.8	1 U			Retain and Sample	8
Shallow	SW 28-41	9/5/2002	GW		72	5 U	8	5 U	20	65	12	9	5 U				
Shallow	SW 28-41	9/25/2002	GW		68	5 U	7	5 U	21	70	13	10	5 U				
Shallow	SW 28-41	10/10/2002	GW		67	5 U	8	5 U	22	120	11	9	5 U				
Shallow	SW 28-41	10/23/2002	GW		47	5 U	5	5 U	14	59	10	8	5 U				
Shallow	SW 28-41	11/7/2002	GW		63.3	1 U	7.3	1 U	19.7	65.6	12	7.2	1 U		5 UE		
Shallow	SW 28-41	11/7/2002	GW		51	5 U	6	5 U	14	55	10	7	5 U				
Shallow	SW 28-41	11/20/2002	GW		60.7	1 U	7.7	1 U	18.6	69.1	11.6	7.6	1 U				
Shallow	SW 28-41	12/2/2002	GW		48	1 U	6.6	1 U	15.7	61.5	10.2	6.9	1 U				
Shallow	SW 28-41	3/5/2003	GW		41.1		6.9	1 U	14.9	55	11	5.5	1 U				
Shallow	SW 28-41	5/21/2003	GW	207	27.8	1 U	5	1 U	8.9	49.6	10.5	3.6	1 U				
Shallow	SW 28-41	6/10/2003	GW	158													
Shallow	SW 28-41	9/29/2003	GW		14.7	1 U	3.3	1 U	8.6	24.2	6	1.9	1 U				
Shallow	SW 28-41	1/22/2004	GW		10.9	1 U	3	1 U	5.6	21.9	7.1	1.8	1 U				
Shallow	SW 28-41	5/11/2004	GW	1.9 J	10	0.8 U	4 J	1 U	5 J	21	7	3 J	1 U		0.5 U		
Shallow	SW 28-41	8/24/2004	GW	16.5	18	0.8 U	3 J	1 U	12	9	6	2 J	1 U		0.5 U		
Shallow	SW 28-41	11/3/2004	GW	9.7	25	0.8 U	3 J	1 U	10	21	7	3 J	1 U		0.5 U		
Shallow	SW 28-41	3/4/2005	GW	0.7 U	5 J	0.8 U	3 J	1 U	4 J	11	6	2 J	1 U		0.5 U		
Shallow	SW 28-41	5/18/2005	GW	5.7	8	0.8 U	4 J	1 U	4 J	13	6	3 J	1 U		0.5 U		
Shallow	SW 28-41	8/16/2005	GW	47	14	0.8 U	2 J	1 U	8	13	11	4 J	1 U		0.5 U		
Shallow	SW 28-41	11/28/2005	GW	8.8	8	0.8 U	2 J	1 U	5 J	10	5 J	2 J					

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
		Screening Levels (SLs):			15	200	5	140	5	7	5	5	70	2	7.8	5	
Shallow	SW 28-41	10/3/2007	GW	1.5	1 J	0.8 U	1 J	1 U	1 J	4 J	4 J	5	1 U		0.5 U		
Shallow	SW 28-41	5/20/2008	GW	43	2.6 U	5 UJ	1.3 J	5 UJ	1.8 U	4.8 U	4.1 U	3.6 J	5 UJ		5 UJ		
Shallow	SW 28-41	8/4/2009	GW	560	8	0.8 U	1 J	1 U	3 J	19	4 J	4 J	1 U	70 U	0.5 U		
Shallow	SW 28-41	3/29/2010	GW	930	13	0.8 U	2 J	1 U	5 J	27	4 J	6	1 U	70 U	0.5 U		
Shallow	SW 28-41	9/9/2011	GW	1100	16 U	0.8 U	2 UJ	1 U	4 J	30	4 J	5 J	1 U		0.5 U		
Shallow	SW 28-41	9/9/2011	GW	1100	17 U	0.8 U	2 UJ	1 U	5 J	32	4 J	5 J	1 U		0.5 U		
Shallow	SW 28-41	5/8/2012	GW	760													
Shallow	SW 28-41	5/30/2013	GW	570	13	0.8 U	1 J	1 U	3 J	39	4 J	5	1 U		0.5 U		
Shallow	SW 28-41	5/14/2015	GW	430	7	0.5 U	1	0.5 U	2	35	4	8	0.5 U		0.5 U		
Shallow	SW 28-41	3/30/2016	GW	130	4	0.5 U	0.6 J	0.5 U	0.6 J	12	2	2	0.5 U		0.5 U		
Shallow	SW 28-41	4/18/2017	GW	440	8	0.5 U	1	0.5 U	2	24	2	3	0.5 U		0.5 U		
Shallow	SW 40-07A	9/29/2003	GW		2.3	1 U	1.1	1 U	4.1	6167	75.1	569	2.6				
Shallow	SW 40-07A	9/29/2003	GW	752	2.3	1 U	1.1	1 U	4	6205	76.2	578	2.6				
Shallow	SW 40-07A	1/22/2004	GW		1 U	1 U	1 U	1 U	2 J	7861	61	469	3.1 J				
Shallow	SW 40-07A	5/4/2004	GW	373 J	4 U	4 U	5 U	5 U	4 U	5300 J	53 J	590 J	5 U		3 U		
Shallow	SW 40-07A	5/4/2004	GW	135 J	8 U	8 U	10 U	10 U	8 U	7600 J	87 J	920 J	10 U		5 U		
Shallow	SW 40-07A	8/31/2004	GW	569	2 J	0.8 U	1 J	1 U	3 J	1000	13	140	1 U		0.5 U		
Shallow	SW 40-07A	11/10/2004	GW	369	2 U	2 U	3 U	3 U	3 J	1800	49	560	3 J		1 U		
Shallow	SW 40-07A	3/4/2005	GW	1870	4 J	0.8 U	2 J	1 U	7	890	13	210	1 U		0.5 U		
Shallow	SW 40-07A	5/12/2005	GW	1060	2 J	2 U	2 U	2 U	4 J	1600	21	290	2 U		1 U		
Shallow	SW 40-07A	8/16/2005	GW	880	2 J	0.8 U	1 J	1 U	4 J	990	32	270	1 J		0.5 U		
Shallow	SW 40-07A	11/22/2005	GW	860	4 U	4 U	5 U	5 U	7 J	3200	100	1000	13 J		3 U		
Shallow	SW 40-07A	5/16/2006	GW	480	3 J	0.8 U	2 J	1 U	9	730	310	540	2 J		0.5 U		
Shallow	SW 40-07A	11/16/2006	GW	190	4 J	0.8 U	2 J	1 U	10	140	38	3100	300		0.5 U		
Shallow	SW 40-07A	2/14/2007	GW	610	3 J	2 U	2 J	2 U	10 J	560	200	1200	54		1 U		
Shallow	SW 40-07A	10/2/2007	GW	640	2 J	0.8 U	2 J	1 U	6	240	44	1000	230		0.5 U		
Shallow	SW 40-07A	5/16/2008	GW	620	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	550 J	100 UJ	150 J		100 UJ		
Shallow	SW 40-07A	7/31/2009	GW	620	1 J	0.8 U	1 J	1 U	4 J	500	74	290	14	70 U	0.5 U		
Shallow	SW 40-07A	3/29/2010	GW	310	0.8 U	0.8 U	1 U	1 U	2 J	630	56	260	8	70 U	0.5 U		
Shallow	SW 40-07A	3/29/2010	GW	320	0.8 U	0.8 U	1 U	1 U	3 J	690	59	280	8	70 U	0.5 U		
Shallow	SW 40-07A	9/9/2011	GW	94	8 U	8 U	10 U	10 U	8 U	4900	660	1800	220		5 U		
Shallow	SW 40-07A	9/9/2011	GW	100	10 UJ	4 U	5 U	5 U	5 J	5100	680	1900	220		3 U		
Shallow	SW 40-07A	5/9/2012	GW	700	0.8 U	0.8 U	1 U	1 U	2 J	260	18	100	3 J		0.5 U		
Shallow	SW 40-07A	5/28/2013	GW	560	0.8 J	0.8 U	1 U	1 U	2 J	920	60	310	10		0.5 U		
Shallow	SW 40-07A	5/14/2014	GW	320	0.5 U	0.5 U	0.5 U	0.5 U	0.9 J	510	20	130	5		0.5 U		
Shallow	SW 40-07A	5/13/2015	GW	320	0.5 U	0.5 U	0.5 U	0.5 U	1	1600	44	260	21		0.5 U		
Shallow	SW 40-07A	3/30/2016	GW	290	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	290	11	110	4		0.5 U		
Shallow	SW 40-07A	4/18/2017	GW	1300	1	0.5 U	0.5 U	0.5 U	1	51	2	16	0.5 U		0.5 U		
Shallow	SW 40-57	11/28/2005	GW	14	3 J	2 U	3 U	3 U	8 J	2400	390	550	46		1 U		
Shallow	SW 40-57	5/16/2006	GW	36	4 J	0.8 U	2 J	1 U	6	980	170	330	40		0.5 U		
Shallow	SW 40-57	8/15/2006	GW	47	3 J	0.8 U	2 J	1 U	7	1500	290	470	64		0.5 U		
Shallow	SW 40-57	11/16/2006	GW	100	4 J	0.8 U	2 J	1 U	7	2300	290	560	71		0.5 U		
Shallow	SW 40-57	10/3/2007	GW	86	3 J	0.8 U	1 J	1 U	5	2000	210	370	71		0.5 U		
Shallow	SW 40-57	5/27/2008	GW	52 J	500 UJ	500 UJ	500 UJ	500 UJ	500 UJ	1500 J	500 UJ	300 J	500 UJ		500 UJ		
Shallow	SW 40-57	8/18/2009	GW	20	2 U	2 U	3 U	3 U	4 J	2600	170	860	62	180 U	1 U		
Shallow	SW 40-57	4/1/2010	GW	19	1 J	0.8 U	1 U	1 U	3 J	1200	110	330	34	70 U	0.5 U		
Shallow	SW 40-57	9/14/2011	GW	23	4 U	4 U	5 U	5 U	4 U	2100	120	390	19 J		3 U		
Shallow	SW 40-57	5/8/2012	GW	18	0.8 U	0.8 U	1 U	1 U	3 J	960	91	240	17		0.5 U		
Shallow	SW 40-57	5															

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	SW 42-02	11/6/2002	GW		2.7	1 U	1 U	1 U	8.2	5.4	1 U	1 U	1 U			Retain and Sample	7
Shallow	SW 42-02	5/20/2003	GW	7010	4.6	1 U	1 U	1 U	14.5	16.7	1 U	1 U	1 U				
Shallow	SW 42-02	5/20/2003	GW	6650													
Shallow	SW 42-02	2/3/2004	GW		4	1 U	1.4	1 U	11.4	28	1 U	1.4	1 U				
Shallow	SW 42-02	5/7/2004	GW	3850	4 J	0.8 U	1 J	1 U	9	25	1 U	2 J	1 U		0.5 U		
Shallow	SW 42-02	8/17/2004	GW	2980	3 J	0.8 U	1 U	1 U	6	19	1 U	1 J	1 U		0.5 U		
Shallow	SW 42-02	8/17/2004	GW	3090	3 J	0.8 U	1 J	1 U	6	19	1 U	1 J	1 U		0.5 U		
Shallow	SW 42-02	11/2/2004	GW	2640	3 J	0.8 U	1 U	1 U	4 J	23 J	1 U	1 J	1 U		0.5 U		
Shallow	SW 42-02	11/2/2004	GW	2620	2 J	0.8 U	1 U	1 U	5 J	6 J	1 U	0.8 J	1 U		0.5 U		
Shallow	SW 42-02	2/23/2005	GW	2250													
Shallow	SW 42-02	5/18/2005	GW	1690													
Shallow	SW 42-02	5/17/2006	GW	1200													
Shallow	SW 42-02	9/13/2011	GW	710	0.8 U	0.8 U	1 U	1 U	3 J	3 J	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 42-02	5/16/2012	GW		0.8 J	0.8 U	1 U	1 U	4 J	3 J	1 U	1 J	1 U		0.5 U		
Shallow	SW 42-02	5/31/2013	GW	940	0.8 U	0.8 U	1 U	1 U	4 J	3 J	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 42-02	5/14/2014	GW		0.7 J	0.5 U	0.5 U	0.5 U	4	4	0.5 U	0.6 J	0.5 U		0.5 U		
Shallow	SW 42-02	5/13/2015	GW	520	0.5 U	0.5 U	0.5 U	0.5 U	2	4	0.7 J	3	0.8 J		0.5 U		
Shallow	SW 42-02	4/1/2016	GW	490	0.5 U	0.5 U	0.5 U	0.5 U	0.9 J	2	0.7 J	1	0.5 U		0.5 U		
Shallow	SW 42-02	4/19/2017	GW	1100	0.5 U	0.5 U	0.5 U	0.5 U	1	5	0.5 U	1	0.5 U		0.5 U		
Shallow	SW 47-02	5/4/2004	GW	1220	6	0.8 U	3 J	1 U	9	42	9	8	1 U		0.5 U	Retain and Sample	4
Shallow	SW 47-02	3/4/2005	GW	1410	4 J	0.8 U	2 J	1 U	5	27	4 J	4 J	1 U		0.5 U		
Shallow	SW 47-02	5/18/2005	GW	1390													
Shallow	SW 47-02	5/17/2006	GW	1200													
Shallow	SW 47-02	8/13/2009	GW	970	2 J	0.8 U	2 J	1 U	4 J	25	9	5 J	1 U	70 U	0.5 U		
Shallow	SW 47-02	3/29/2010	GW	730	2 J	0.8 U	1 U	1 U	3 J	19	5	3 J	1 U	70 U	0.5 U		
Shallow	SW 47-02	9/15/2011	GW	43	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 47-02	5/16/2012	GW		0.8 J	0.8 U	1 U	1 U	1 J	8	5 J	2 J	1 U		0.5 U		
Shallow	SW 47-02	5/31/2013	GW	460	1 J	0.8 U	1 U	1 U	2 J	11	6	3 J	1 U		0.5 U		
Shallow	SW 47-02	5/31/2013	GW	460	2 J	0.8 U	1 J	1 U	2 J	14	6	4 J	1 U		0.5 U		
Shallow	SW 47-02	5/14/2014	GW		3	0.5 U	1	0.5 U	4	30	6	5	0.5 U		0.5 U		
Shallow	SW 47-02	5/14/2015	GW	740	3	0.5 U	1	0.5 U	3	36	7	6	0.5 U		0.5 U		
Shallow	SW 47-02	3/30/2016	GW	320	1	0.5 U	0.7 J	0.5 U	2	18	4	3	0.5 U		0.5 U		
Shallow	SW 47-02	4/18/2017	GW	710	2	0.5 U	1	0.5 U	2	21	6	6	0.5 U		0.5 U		

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth	
		Screening Levels (SLs):			15	200	5	140	5	7	5	5	70	2	7.8	5		
																	(ft)	
Shallow	SW 74-07	8/30/2004	GW	246	0.8 U	0.8 U	1 U	1 U	0.8 U	340	120	520	1 U		0.5 U			
Shallow	SW 74-07	11/4/2004	GW	45.3	0.8 U	0.8 U	1 U	1 U	0.8 U	140	190	600	5 J		0.5 U			
Shallow	SW 74-07	3/4/2005	GW	86.6	0.8 U	0.8 U	1 U	1 U	0.8 U	89	87	230	2 J		0.5 U			
Shallow	SW 74-07	5/17/2005	GW		5 J	0.8 U	1 U	1 U	0.8 U	360	54	51	1 U		0.5 U			
Shallow	SW 74-07	5/17/2006	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	600	34	50	2 J		0.5 U			
Shallow	SW 74-07	10/3/2007	GW	1300	0.8 U	0.8 U	1 U	1 U	0.8 U	230	59	320	17		0.5 U			
Shallow	SW 74-07	5/19/2008	GW	2200	250 UJ	250 UJ	250 UJ	250 UJ	250 UJ	910 J	250 UJ	250 UJ				250 UJ		
Shallow	SW 74-07	8/17/2009	GW	520	0.8 U	0.8 U	1 U	1 U	0.8 U	710	75	150	4 J	70 U	0.5 U			
Shallow	SW 74-07	3/18/2010	GW	1000	0.8 U	0.8 U	1 U	1 U	0.8 U	800	21	26	1 U	70 U	0.5 U			
Shallow	SW 74-07	3/18/2010	GW	950	0.8 U	0.8 U	1 U	1 U	0.8 U	960	22	27	1 J	70 U	0.5 U			
Shallow	SW 74-07	11/10/2010	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	330	35	110	2 J	70 U	0.5 U			
Shallow	SW 74-07	9/14/2011	GW	50	0.8 U	0.8 U	1 U	1 U	0.8 U	290	38	290	4 J		0.5 U			
Shallow	SW 74-07	5/14/2012	GW	130	0.8 U	0.8 U	1 U	1 U	0.8 U	640	26	53	1 U		0.5 U		Retain and Sample	
Shallow	SW 74-07	5/14/2012	GW	130	0.8 U	0.8 U	1 U	1 U	0.8 U	610	26	52	1 U		0.5 U		7	
Shallow	SW 74-07	5/31/2013	GW	150 j	0.8 U	0.8 U	1 U	1 U	0.8 U	620	28	65	1 U	0.051 U	0.5 U			
Shallow	SW 74-07	5/31/2013	GW	210	0.8 U	0.8 U	1 U	1 U	0.8 U	660	28	65	1 U	0.055 U	0.5 U			
Shallow	SW 74-07	5/18/2014	GW	210	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	890	23	17	0.5 U		0.5 U			
Shallow	SW 74-07	5/18/2014	GW	160	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	770	24	25	0.6 J		0.5 U			
Shallow	SW 74-07	5/14/2015	GW	73	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	500	19	22	0.5 U		0.5 U			
Shallow	SW 74-07	5/14/2015	GW	74	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	520	18	22	0.5 U		0.5 U			
Shallow	SW 74-07	3/31/2016	GW	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	440	32	69	0.5 U		0.5 U			
Shallow	SW 74-07	3/31/2016	GW	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	440	32	67	0.5 U		0.5 U			
Shallow	SW 74-07	4/19/2017	GW	95	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	790	46	91	0.8 J		0.5 U			
Shallow	SW 74-07	4/19/2017	GW	97	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	800	46	90	0.6 J		0.5 U			
Shallow	SW 222-02	4/3/2003	GW		5 U	5 U	12	5 U	27	5 U	14	2 J	5 U		5 U			
Shallow	SW 222-02	5/23/2003	GW	7.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Shallow	SW 222-02	5/30/2008	GW	12	3 J	5 UJ	5 UJ	5 UJ	3.3 J	5 UJ	5 UJ	5 UJ	5 UJ		5 UJ			
Shallow	SW 222-02	3/16/2010	GW	1.8	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 222-02	9/1/2011	GW	13	3 J	0.8 U	1 U	1 U	3 J	0.8 U	1 J	0.8 U	1 U	4.4 J	0.5 U			
Shallow	SW 222-02	5/7/2012	GW	8.6	3 J	0.8 U	1 U	1 U	4 J	0.8 U	1 J	0.8 U	1 U		0.5 U			
Shallow	SW 222-02	5/22/2013	GW	4.6 j	1 Jj	0.8 U	1 U	1 U	2 Jj	0.8 U	1 U	0.8 U	1 U	2.6 j	0.5 U			
Shallow	SW 222-02	11/19/2013	GW	5	1 J	0.8 U	1 U	1 U	3 J	0.8 U	1 J	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 222-02	5/13/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12	0.5 U		
Shallow	SW 222-02	5/12/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U	0.5 U		
Shallow	SW 222-02	11/6/2015	GW	2.6	0.5 U	0.5 U	0.6 J	0.5 U	2	0.5 U	0.5 J	0.5 U	0.5 U		0.5 U			
Shallow	SW 222-02	3/29/2016	GW	0.32 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U	0.5 U		
Shallow	SW 222-02	10/26/2016	GW	0.92 J	0.8 J	0.5 U	0.7 J	0.5 U	2	0.5 U	0.6 J	0.5 U	0.5 U		0.5 U			
Shallow	SW 222-02	4/18/2017	GW	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U	0.5 U		
Shallow	SW SB-03	8/18/2009	GW	2 U	0.8 U	0.8 U	1 J	1 U	2 J	0.9 J	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW SB-03	3/24/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW SB-03	9/1/2011	GW	8.5	0.8 U	0.8 U	1 J	1 U	2 J	0.8 U	1 U	2 J	1 U	1.8 J	0.5 U			
Shallow	SW SB-03	5/3/2012	GW	0.27 J	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 J	1 U		0.5 U			
Shallow	SW SB-03	5/22/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW SB-03	11/20/2013	GW	0.53 J	0.8 U	0.8 U	1 J	1 U	2 J	0.8 U	1 U	1 J	1 U	70 U	0.5 U			
Shallow	SW SB-03	5/13/2014	GW	4.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U		0.5 U			
Shallow	SW SB-03	5/12/2015	GW	0.2 U	0.5 U	0.5 U												

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Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	SW TTU-03	6/11/2008	GW	980	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		
Shallow	SW TTU-03	3/31/2010	GW	1100	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-03	11/10/2010	GW	1200	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-03	6/15/2011	GW	48	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-03	12/14/2011	GW	36	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-03	5/10/2012	GW	980	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-03	11/9/2012	GW	4200	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-03	5/29/2013	GW	26000	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-03	11/20/2013	GW	3800	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-03	5/15/2014	GW	2700													
Shallow	SW TTU-03	11/12/2014	GW	1300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW TTU-03	5/14/2015	GW	1600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW TTU-03	4/1/2016	GW	460	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW TTU-03	4/20/2017	GW	770	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW 46-02	8/20/2008	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	4 J	2 J	2 J	1 U	70 U	0.5 U		
Shallow	BW 46-02	7/31/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 J	3 J	1 U	70 U	0.5 U		
Shallow	BW 46-02	3/25/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	2 J	1 U	70 U	0.5 U		
Shallow	BW 68-01	11/5/2008	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 68-01	8/6/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 68-01	3/26/2010	GW	0.39 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 73-01S	6/30/2005	GW	31.6	0.8 U	0.8 U	2 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 73-01S	8/12/2009	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 73-01S	3/18/2010	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 73-01S	9/14/2011	GW	8.2													
Shallow	BW 73-01S	5/14/2012	GW	5.4													
Shallow	BW 73-01S	5/30/2013	GW	1.5 j	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 73-01S	5/30/2013	GW	2.8	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 73-01S	5/17/2014	GW	1 U													
Shallow	BW 100-02S	5/18/2005	GW	2 J	29	0.8 U	7	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 100-02S	9/14/2011	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 100-02S	5/4/2012	GW	0.31 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 100-02S	5/24/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 100-02S	5/17/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Shallow	SW 35-01S	5/5/2004	GW	309	0.8 U	0.8 U	1 U	1 U	0.8 U	9 J	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 35-01S	3/1/2005	GW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 35-01S	9/15/2011	GW	0.28 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 35-01S	5/28/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 40-06	5/19/2002	GW		1 U	1 U	1 U	1 U	1.2	191	6.6	8.2	1 U				
Shallow	SW 40-06	11/5/2002	GW		1 U	1 U	1 U	1 U	1 U	53.8	2.4	3.2	1 U				
Shallow	SW 40-06	5/20/2003	GW	9.4	1 U	1 U	1 U	1 U	1 U	138	13	16.7	1 U				
Shallow	SW 40-06	5/4/2004	GW	2.6 J	0.8 U	0.8 U	1 U	1 U	0.8 U	76	19	14	1 U		0.5 U		
Shallow	SW 40-06	5/4/2004	GW	6.2	0.8 U	0.8 U	1 U	1 U	0.8 U	83	15	13	1 U		0.5 U		
Shallow	SW 40-06	8/31/2004	GW	53.4	0.8 U	0.8 U	1 U	1 U	0.8 J	290	16	22	1 U		0.5 U		
Shallow	SW 40-06	11/3/2004	GW	9.2	11	0.8 U	1 U	1 U	0.8 U	120	15	13	1 J		0.5 U		
Shallow	SW 40-06	3/4/2005	GW	2.1 J	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 J	0.8 U	1 U		0.5 U		
Shallow	SW 40-06	5/17/2006	GW	1.6	5 J	0.8 U	1 U	1 U	0.8 U	5	1 U	0.8 U	1 U		0.5 U		
Shallow	SW 40-06	2/15/2007	GW	21	0.8 U	0.8 U	1 U	1 U	0.8 U	23	2 J	2 J	1 U		0.5 U		
Shallow	SW 40-06	2/15/2007	GW	24	0.8 U	0.8 U	1 U	1 U</									

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth	
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)	
Shallow	SW 40-51	5/19/2002	GW		12.7	1 U	2.2	1 U	50.4	23.5	1.9	3.1	1 U			Abandon: below SLs for >3 years	7	
Shallow	SW 40-51	11/6/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Shallow	SW 40-51	5/20/2003	GW	175	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U					
Shallow	SW 40-51	5/20/2003	GW		1 U	1 U	1 U	1 U	1.4	1.2	1 U	1 U	1 U					
Shallow	SW 40-51	1/22/2004	GW		1 U	1 U	1.1	1 U	2.2	1.7	1 U	1 U	1 U					
Shallow	SW 40-51	5/11/2004	GW	4410	11	0.8 U	3 J	1 U	40	36	2 J	5	1 U		0.5 U			
Shallow	SW 40-51	8/24/2004	GW	3980	8	0.8 U	3 J	1 U	30	36	5 J	5	1 U		0.5 U			
Shallow	SW 40-51	11/10/2004	GW	3390	7	0.8 U	3 J	1 U	29	34	5 J	4 J	1 U		0.5 U			
Shallow	SW 40-51	3/4/2005	GW	13.9	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 40-51	5/12/2005	GW	3010	6	0.8 U	2 J	1 U	22	29	2 J	3 J	1 U		0.5 U			
Shallow	SW 40-51	8/16/2005	GW	2500	6	0.8 U	3 J	1 U	26	28	4 J	3 J	1 U		0.5 U			
Shallow	SW 40-51	11/28/2005	GW	170	0.8 U	0.8 U	1 U	1 U	2 J	3 J	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 40-51	5/17/2006	GW	2300	8	0.8 U	2 J	1 U	28	29	2 J	3 J	1 U		0.5 U			
Shallow	SW 40-51	2/14/2007	GW	1000	5 J	0.8 U	1 U	1 U	16	13	1 U	1 J	1 U		0.5 U	(cont.)	7	
Shallow	SW 40-51	10/2/2007	GW	570	3 J	0.8 U	2 J	1 U	17	9	7	2 J	1 U		0.5 U			
Shallow	SW 40-51	5/29/2008	GW	89 J	5 UJ	5 UJ	5 UJ	5 UJ	1.4 J	1.5 J	5 UJ	5 UJ	5 UJ		5 UJ			
Shallow	SW 40-51	8/4/2009	GW	15	0.8 U	0.8 U	1 J	1 U	8	1 J	6	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 40-51	3/17/2010	GW	3.8	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 40-51	9/14/2011	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 40-51	5/16/2012	GW		0.8 U	0.8 U	1 U	1 U	5 J	4 J	3 J	0.8 U	1 U		0.5 U			
Shallow	SW 40-51	5/31/2013	GW	6	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 40-51	5/19/2014	GW		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U			
Shallow	SW 47-05	11/28/2005	GW	0.97 J	2 J	0.8 U	1 U	1 U	0.8 U	3 J	2 J	0.8 U	1 U		0.5 U	Abandon: below SLs for >3 years	5	
Shallow	SW 47-05	10/2/2007	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 47-05	6/6/2008	GW	1 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ			
Shallow	SW 47-05	8/13/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 47-05	4/1/2010	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 47-05	5/31/2013	GW	1 U	0.8 U	0.8 U	2 J	1 U	0.8 U	0.8 U	3 J	0.8 U	1 U		0.5 U			
Shallow	SW 152-01	5/20/2003	GW	10.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			Abandon: below SLs for >3 years	6
Shallow	SW 152-01	5/20/2003	GW	8.65														
Shallow	SW 152-01	5/13/2004	GW	4.8	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 152-01	10/2/2007	GW	0.6 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW 152-01	8/13/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW 152-01	3/19/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			
Shallow	SW CM-05	2/3/2004	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		Abandon: below SLs for >3 years	6	
Shallow	SW CM-05	5/5/2004	GW	2.6 J														
Shallow	SW CM-05	9/13/2011	GW	0.3 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW CM-05	4/4/2012	GW		1 J	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW CM-05	5/15/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Shallow	SW PBS-01	11/4/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		Abandon: below SLs (ND) for >3 years; not sampled since 2014	5	
Shallow	SW PBS-01	11/4/2002	GW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Shallow	SW PBS-01	5/20/2003	GW	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Shallow	SW PBS-01	5/20/2003	GW	6.04														
Shallow	SW PBS-01	5/11/2004	GW	2.6 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U			
Shallow	SW PBS-01	8/13/2009	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U			

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	SW SB-01	8/12/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs (ND) for >3 years; appears to be west of migration pathway	11
Shallow	SW SB-01	3/24/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW SB-01	8/31/2011	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.049 UJ	0.5 U		
Shallow	SW SB-01	5/7/2012	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW SB-01	5/21/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW SB-01	11/19/2013	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW SB-01	5/13/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-01	5/13/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-01	11/6/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-01	3/30/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-01	10/26/2016	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-01	4/18/2017	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	8/12/2009	GW	2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: below SLs for >3 years; appears to be west of migration pathway	11
Shallow	SW SB-02	3/24/2010	GW	0.71 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW SB-02	9/1/2011	GW	0.58 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.05 UJ	0.5 U		
Shallow	SW SB-02	5/2/2012	GW	0.73 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW SB-02	5/21/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.053 U	0.5 U		
Shallow	SW SB-02	11/20/2013	GW	0.45 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW SB-02	5/13/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	5/13/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	11/6/2015	GW	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	3/29/2016	GW	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	10/26/2016	GW	0.47 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW SB-02	4/18/2017	GW	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	SW TTU-05	8/17/2006	GW	2.5	110	0.8 U	4 J	1 U	37	84	10		1 U		0.5 U	Abandon: Part of TTU monitoring that was transferred from VA DEQ to USEPA in 2012; below SLs for >3 years	7
Shallow	SW TTU-05	11/16/2006	GW	0.7 J	63	0.8 U	3 J	1 U	24	47	8		1 U		0.5 U		
Shallow	SW TTU-05	5/14/2008	GW	0.98 J	28 J	5 UJ	5 UJ	5 UJ	9.6 J	24 J	2.6 J	2.3 J	5 UJ		5 UJ		
Shallow	SW TTU-05	8/11/2008	GW	1.4	44	0.8 U	2 J	1 U	16	38	5 J	4 J	1 U	70 U	0.5 U		
Shallow	SW TTU-05	3/31/2010	GW	0.29 J	6	0.8 U	1 U	1 U	3 J	5 J	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-05	11/9/2010	GW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	SW TTU-05	6/14/2011	GW	1.2	71	0.8 U	5 J	1 U	40	81	7	6	1 U	70 U	0.5 U		
Shallow	SW TTU-05	10/4/2011	GW	0.2 U													
Shallow	SW TTU-05	12/14/2011	GW	0.22 J	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-05	5/10/2012	GW	1.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-05	11/8/2012	GW	1.5	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-05	5/28/2013	GW	2.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	SW TTU-05	5/15/2014	GW	1 U													
Shallow	SW TTU-05	11/12/2014	GW	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW 5-05S	11/8/2004	GW	355	9300	8 U	41 J	10 U	220	29 J	10 U	8 U	10 U		5 U	Abandon: exceeded SLs for perchlorate, PCE, TCE, 111TCA, and 11DCE when last sampled; redundant with nearby SW 5-04 (16 ft) and downgradient monitoring of perchlorate and VOC detections of same COCs at BW 28-02S (17 ft) and BW 28-04D (21 ft)	10
Shallow	BW 5-05S	12/21/2004	GW	379													
Shallow	BW 5-05S	2/24/2005	GW	531	6900	3 J	65	1 U	270	23	12	1 J	1 U		0.5 U		
Shallow	BW 5-05S	5/8/2006	GW		5200	2 J	51	1 J	82	60	12	6	1 U		0.5 U		
Shallow	BW 5-05S	11/16/2006	GW		3500	2 J	34	1 J	95	65	11	6	1 U		0.5 U		
Shallow	BW 5-05S	10/2/2007	GW	2200	5500	2 J	30	2 J	130	130	13	7	1 U		0.5 U		
Shallow	BW 5-05S	5/22/2008	GW	520	5600 J	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ		
Shallow	BW 5-05S	8/3/2009	GW	740	2300	1 J	39	1 U	94 J	140	17	12	1 U	70 U	0.5 U		
Shallow	BW 5-05S	8/3/2009	GW	750	1800	2 U	32	3 U	65 J	110	13	10 J	3 U	180 U	1 U		
Shallow	BW 5-05S	3/29/2010	GW	520	2900	1 J	63	1 J	110	150	20	12	1 U	70 U	0.5 U		
Shallow	BW 5-05S	11/11/2010	GW		2800	1 J	28	1 U	100	120	16	11	1 U	70 U	0.5 U		
Shallow	BW 5-05S	9/7/2011	GW	250		0.8 U	1 U	1 U	1 J	170	21	15	1 U	2 J	0.5 U		
Shallow	BW 5-05S	12/12/2011	GW		2600	4 U	22 J	5 U	78	94	12 J	7 J	5 U		3 U		
Shallow	BW 5-05S	4/2/2012	GW	18	90	0.8 U	36	1 U	39	0.9 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 5-05S	11/8/2012	GW		140	0.8 U	69	1 U	100	2 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 5-05S	5/29/2013	GW	310	2 J	0.8 U	1 U	1 U	1 J	190	24	14	1 U	2.2	0.5 U		
Shallow	BW 5-05S	11/20/2013	GW	25	140	0.8 U	88	1 U	49	3 J	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 5-05S	5/17/2014	GW		0.5 U	0.5 U	0.6 J	0.5 U	0.9 J	160	21	12	0.5 U		0.5 U		
Shallow	BW 5-05S	5/17/2014	GW		1	0.5 U	0.5 J	0.5 U	0.9 J	160	21	12	0.5 U		0.5 U		
Shallow	BW 5-05S	11/11/2014	GW		6900	3 U	33	3 U	290	91	18	8	3 U		3 U		
Shallow	BW 5-06D	11/8/2004	GW	495	2 J	0.8 U	1 U	1 U	1 J	15	1 J	1 J	1 U		0.5 U	Abandon: exceeded SLs for perchlorate, PCE, and TCE, when last sampled in 2014; redundant with nearby SW 5-04 (16 ft) and downgradient perchlorate and VOC detections at BW 28-02S (17 ft), BW 28-04D (21 ft)	16
Shallow	BW 5-06D	12/21/2004	GW	619													
Shallow	BW 5-06D	2/24/2005	GW	1470	5	0.8 U	1 U	1 U	1 J	35	5 J	4 J	1 U		0.5 U		
Shallow	BW 5-06D	5/8/2006	GW	2700													
Shallow	BW 5-06D	11/11/2010	GW		3 J	0.8 U	1 U	1 U	1 J	110	14	11	1 U	70 U	0.5 U		
Shallow	BW 5-06D	9/7/2011	GW	500	2 J	0.8 U	1 U	1 U	1 J	100	12	9	1 U		0.5 U		
Shallow	BW 5-06D	12/12/2011	GW	520	3 U	0.8 U	1 U	1 U	2 J	130	14	10	1 U		0.5 U		
Shallow	BW 5-06D	4/2/2012	GW	300	1 J	0.8 U	1 U	1 U	2 J	69	7	5	1 U		0.5 U		
Shallow	BW 5-06D	11/8/2012	GW		5	0.8 U	1 U	1 U	2 J	150	16	11	1 U		0.5 U		
Shallow	BW 5-06D	5/29/2013	GW	470	4 J	0.8 U	1 U	1 U	1 J	150	15	10	1 U	2.6	0.5 U		
Shallow	BW 5-06D	11/20/2013	GW	410	4 J	0.8 U	1 U	1 U	2 J	140	14	8	1 U	70 U	0.5 U		
Shallow	BW 5-06D	5/17/2014	GW	440	2	0.5 U	0.5 J	0.5 U	2	130	16	10	0.5 U	2.8	0.5 U		
Shallow	BW 5-06D	11/11/2014	GW	440	2	0.5 U	0.5 U	0.5 U	1	120	15	9	0.5 U		0.5 U		
Shallow	BW 16-04D	11/9/2004	GW	4450	26	0.8 U	5	1 U	21	100	14	11	1 U		0.5 U	Abandon: exceeds SLs for perchlorate, PCE, TCE, and 11DCE; redundant with downgradient perchlorate, PCE, TCE, and 11DCE detections at BW 28-02S (17 ft), BW 28-04D (21 ft), SW 40-07A (11 ft), and SW 40-57 (12 ft)	18
Shallow	BW 16-04D	3/3/2005	GW	5130	27	0.8 U	4 J	1 U	16	100	13	10	1 U		0.5 U		
Shallow	BW 16-04D	5/17/2005	GW	5270	21	0.8 U	4 J	1 U	13	90	11	9	1 U		0.5 U		
Shallow	BW 16-04D	5/9/2006	GW	6900	19	0.8 U	3 J	1 U	14	110	10	9	1 U		0.5 U		
Shallow	BW 16-04D	7/29/2009	GW	5900	23	0.8 U	4 J	1 U	19	190	13	14	1 U	70 U	0.5 U		
Shallow	BW 16-04D	3/19/2010	GW	8900	22	0.8 U	4 J	1 U	18	180	12	13	1 U	70 U	0.5 U		
Shallow	BW 16-04D	11/10/2010	GW	5200													
Shallow	BW 16-04D	9/12/2011	GW	14000	20	0.8 U	3 J	1 U	13	200	17	16	1 U		0.5 U		
Shallow	BW 16-04D	5/4/2012	GW	4300	24	0.8 U	3 J	1 U	13	230	17	18	1 U		0.5 U		
Shallow	BW 16-04D	11/8/2012	GW	4400	21	0.8 U	3 J	1 U	13	220	16	17	1 U		0.5 U		
Shallow	BW 16-04D	11/8/2012	GW	4000	22	0.8 U	3 J	1 U	13	220	16	17	1 U		0.5 U		

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW 31-01S	11/21/2005	GW	350	1 J	0.8 U	1 J	1 U	1 J	160	33	42	1 U		0.5 U	Abandon: exceeds SLs for PCE and TCE, with decreasing trends; located at periphery of plume; bounded by stream and surface water to west; higher VOC concentrations to south-southeast in downflow direction	5
Shallow	BW 31-01S	5/10/2006	GW	210	0.8 U	0.8 U	1 U	1 U	0.9 J	100	31	38	1 U		0.5 U		
Shallow	BW 31-01S	9/6/2011	GW	15	0.8 U	0.8 U	1 J	1 U	0.8 U	110	47	33	1 U		0.5 U		
Shallow	BW 31-01S	5/1/2012	GW		0.8 U	0.8 U	1 J	1 U	0.8 U	120	48	31	1 U		0.5 U		
Shallow	BW 31-01S	5/30/2013	GW	20	0.8 U	0.8 U	1 U	1 U	0.8 U	140	47	23	1 U	0.7	0.5 U		
Shallow	BW 31-01S	5/17/2014	GW		0.5 U	0.5 U	0.6 J	0.5 U	0.5 U	110	43	17	0.5 U		0.5 U		
Shallow	BW 31-01S	5/13/2015	GW	3.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	76	28	13	0.5 U		0.5 U		
Shallow	BW 31-01S	3/30/2016	GW	1.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	69	28	11	0.5 U		0.5 U		
Shallow	BW 31-01S	4/19/2017	GW	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	22	8	5	0.5 U		0.5 U		
Shallow	BW 34-01	8/19/2008	GW	8900	0.8 U	0.8 U	6	1 U	0.8 U	14	1 U	1 J	1 U	70 U	0.5 U	Abandon: exceeds SL for perchlorate only, which has decreasing trend, and is significantly lower since soil IMs in 2011; located at periphery of plume area; redundant with other TTU monitoring for perchlorate and VOCs within higher concentration areas to east	40
Shallow	BW 34-01	8/5/2009	GW	3300	2 J	0.8 U	5	1 U	0.8 U	13	1 U	0.9 J	1 U	70 U	0.5 U		
Shallow	BW 34-01	8/5/2009	GW	3500	2 J	0.8 U	5	1 U	0.8 U	13	1 U	0.8 J	1 U	70 U	0.5 U		
Shallow	BW 34-01	3/25/2010	GW	3200	0.8 U	0.8 U	4 J	1 U	0.8 U	7	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 34-01	9/12/2011	GW	6400 J	0.8 U	0.8 U	4 J	1 U	0.8 U	9	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 34-01	5/1/2012	GW	2100	0.8 U	0.8 U	5 J	1 U	0.8 U	12	1 U	0.8 U	1 U		0.5 U		
Shallow	BW 34-01	5/30/2013	GW	990	0.8 U	0.8 U	4 J	1 U	0.8 U	8	1 U	0.8 J	1 U		0.5 U		
Shallow	BW 34-01	5/13/2015	GW	110	0.5 U	0.5 U	1	0.5 U	0.5 U	4	2	0.9 J	0.5 U		0.5 U		
Shallow	BW 34-01	3/31/2016	GW	77	0.5 U	0.5 U	1 J	0.5 U	0.5 U	4	2	1	0.5 U		0.5 U		
Shallow	BW 34-01	4/19/2017	GW	66	0.5 U	0.5 U	0.6 J	0.5 U	0.5 U	4	1	0.7 J	0.5 U		0.5 U		
Shallow	BW 40-04	8/19/2008	GW	1100	1 J	0.8 U	2 J	1 U	5	410	250	63	1 U	70 U	0.5 U	Abandon: below SLs in 2014; decreased below SLs for perchlorate in 2009, for PCE and TCE in 2013, and for cis12DCE in 2014; nearby SW 40-07A (11 ft) has generally similar decreasing trends for these COCs	40
Shallow	BW 40-04	7/31/2009	GW		0.8 U	0.8 U	2 J	1 U	7	490	260	77	1 U	70 U	0.5 U		
Shallow	BW 40-04	8/4/2009	GW	0.24 J													
Shallow	BW 40-04	3/25/2010	GW	0.2 U	3 J	0.8 U	2 J	1 U	3 J	92	43	130	1 U	70 U	0.5 U		
Shallow	BW 40-04	9/7/2011	GW	0.95 J	0.8 U	0.8 U	1 J	1 U	1 J	0.8 U	1 U	120	1 U		0.5 U		
Shallow	BW 40-04	12/13/2011	GW		0.8 U	0.8 U	1 J	1 U	2 J	28	2 J	110	1 U		0.5 U		
Shallow	BW 40-04	5/9/2012	GW		0.8 U	0.8 U	1 U	1 U	2 J	31	6	78	1 U		0.5 U		
Shallow	BW 40-04	5/28/2013	GW	1 U	0.8 U	0.8 U	1 U	1 U	3 J	0.8 U	1 U	230	1 U		0.5 U		
Shallow	BW 40-04	5/16/2014	GW		0.5 U	0.5 U	0.5 U	0.5 U	0.9 J	0.5 U	0.5 U	80	0.9 J		0.5 U		
Shallow	BW 40-04	11/12/2014	GW		0.5 Uuj	0.5 U	0.5 U	0.5 U	0.9 J	0.5 Uuj	0.5 U	47	1		0.5 U		
Shallow	BW 119-01	8/13/2008	GW	1100	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Abandon: exceeds for perchlorate only, with decreasing trend; redundant with downgradient perchlorate detections at SW 40-57 (12 ft), SW 28-41 (8 ft), and sentinel wells	18
Shallow	BW 119-01	7/30/2009	GW	1700	0.8 U	0.8 U	1 U	1 U	1 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 119-01	3/23/2010	GW	410	0.8 U	0.8 U	1 U	1 U	2 J	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW 119-01	8/30/2011	GW	930													
Shallow	BW 119-01	5/4/2012	GW	260													
Shallow	BW 119-01	5/23/2013	GW	140													
Shallow	BW 119-01	5/15/2014	GW	100													
Shallow	BW 119-01	5/13/2015	GW	160	0.5 U	0.5 U	5	0.5 U	1	0.5 U	0.5 U	0.5 U	0.7 J		0.5 U		
Shallow	BW 119-01	3/31/2016	GW	200	0.5 U	0.5 U	3	0.5 U	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		
Shallow	BW 119-01	4/19/2017	GW	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		

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Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	BW TTU-05	5/8/2008	GW	2100	1.7 J	5 UJ	5 UJ	5 UJ	5 UJ	2.3 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	Abandon: Part of TTU monitoring that was transferred from VA DEQ to USEPA in 2012; BSL for perchlorate in 2017, with decreasing trend since 2012; BSL for VOCs since before TTU remediation in 2011; redundant with BW CG-01D which is downgradient with higher concentrations	23
Shallow	BW TTU-05	5/8/2008	GW	2200	1.7 J	5 UJ	5 UJ	5 UJ	5 UJ	2.2 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ		
Shallow	BW TTU-05	8/8/2008	GW	3700 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 J	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	8/8/2008	GW	2100 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 J	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	3/31/2010	GW	2400	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	11/9/2010	GW	1800	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	11/9/2010	GW	1500	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	6/14/2011	GW	4700 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	6/14/2011	GW	2700 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U		
Shallow	BW TTU-05	10/4/2011	GW	1200													
Shallow	BW TTU-05	12/14/2011	GW	460	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	12/14/2011	GW	490	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	5/7/2012	GW	4600	3 J	0.8 U	1 U	1 U	2 J	5 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	5/10/2012	GW	4700	3 J	0.8 U	1 U	1 U	2 J	5 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	11/8/2012	GW	8000	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	5/28/2013	GW	1500	0.8 U	0.8 U	1 U	1 U	0.8 U	0.9 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	5/28/2013	GW	1400	0.8 U	0.8 U	1 U	1 U	0.8 U	0.9 J	1 U	0.8 U	1 U		0.5 U		
Shallow	BW TTU-05	5/15/2014	GW	240													
Shallow	BW TTU-05	11/12/2014	GW	120	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW TTU-05	11/12/2014	GW	170	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW TTU-05	5/15/2015	GW	130	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW TTU-05	4/1/2016	GW	31	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	BW TTU-05	4/20/2017	GW	13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U		
Shallow	SW 15-02	2/5/2004	GW		2432	1 U	24.9	1 U	91.2	39.5	4.1 J	1.2 J	1 U			Abandon: exceeds SLs for perchlorate, 111TCA, 11DCE, PCE, TCE, and 1,4-dioxane; redundant with upgradient detections at SW 5-04 (16 ft), and downgradient detections of same COCs at BW28-02S (17 ft) and BW 28-04D (21 ft)	13
Shallow	SW 15-02	5/6/2004	GW	154	2200	2 U	29	3 U	90	33	4 J	2 U	3 U		1 U		
Shallow	SW 15-02	8/18/2004	GW	114	2500	2 U	30	3 U	92	25	4 J	2 U	3 U		1 U		
Shallow	SW 15-02	11/2/2004	GW	86.3	2000	2 U	39	2 U	120	32	4 J	2 U	2 U		1 U		
Shallow	SW 15-02	2/24/2005	GW	171	2400	0.9 J	51	1 U	230	30	6	1 J	1 U		0.5 U		
Shallow	SW 15-02	5/17/2005	GW		3000	0.8 J	48	1 J	100	28	6	2 J	1 U		0.5 U		
Shallow	SW 15-02	11/28/2005	GW		3000	4 U	47	5 U	130	28	6 J	4 U	5 U		3 U		
Shallow	SW 15-02	5/16/2006	GW		2600	2 U	38	3 U	110	30	6 J	2 J	3 U		1 U		
Shallow	SW 15-02	11/16/2006	GW		2600	0.9 J	56	1 J	170	37	7	4 J	1 U		0.5 U		
Shallow	SW 15-02	8/17/2009	GW	470	1600	2 U	25	2 U	74	54	7 J	4 J	2 U	140 U	1 U		
Shallow	SW 15-02	8/17/2009	GW	470	1600	2 U	25	2 U	75	57	7 J	4 J	2 U	140 U	1 U		
Shallow	SW 15-02	3/29/2010	GW	290	2100	4 U	28	5 U	87	52	8 J	4 U	5 U	350 U	3 U		
Shallow	SW 15-02	9/8/2011	GW	210	1500	0.8 U	24	1 U	93	60	9	4 J	1 U	20 J	0.5 U		
Shallow	SW 15-02	12/13/2011	GW		1400	2 U	28	3 U	110	42	7 J	3 J	3 U		1 U		
Shallow	SW 15-02	5/11/2012	GW	200	1700	2 U	21	2 U	120	55	8 J	4 J	2 U		1 U		
Shallow	SW 15-02	5/24/2013	GW	110	4500	1 J	110	2 J	400	63	14	5 J	1 U	18 j	0.5 U		
Shallow	SW 15-02	5/24/2013	GW	96	4400	4 U	97	5 U	370	51	12 J	4 U	5 U	0.05 U	3 U		
Shallow	SW 15-02	5/14/2014	GW	56	2400	3 U	57	3 U	150	39	7	3 U	3 U	14	3 U		
Shallow	SW 15-02	11/12/2014	GW		2200 j	0.5 U	54	0.7 J	170	50 j	10	4	0.5 U		0.5 U		
Shallow	SW 15-02	5/13/2015	GW	67	1500	1 U	44	1 J	81	36	8	3	1 U	17	1 U		
Shallow	SW 15-02	3/31/2016	GW	46	1600	1 U	36	1 U	98	38							

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
		Screening Levels (SLs):			15	200	5	140	5	7	5	70	2	7.8	5		(ft)
Shallow	SW 46-01	5/19/2002	GW		7.8	1 U	4	1 U	15.1	664	24.1	28	1 U				
Shallow	SW 46-01	9/5/2002	GW		5 U	5 U	4 J	5 U	14	690	23	30	5 U			5 U	
Shallow	SW 46-01	9/25/2002	GW		5 U	5 U	4 J	5 U	16	580 J	18	25	5 U			5 U	
Shallow	SW 46-01	10/10/2002	GW		5 U	5 U	4 J	5 U	14	670 J	16	22	5 U			5 U	
Shallow	SW 46-01	10/23/2002	GW		5 U	5 U	5 U	5 U	12	500 J	17	22	5 U			5 U	
Shallow	SW 46-01	11/5/2002	GW		5	1 U	3.1	1 U	9.9	1 U	16.6	17.6	1 U				
Shallow	SW 46-01	11/7/2002	GW		5 U	5 U	3 J	5 U	9	450	17	22	5 U			5 U	
Shallow	SW 46-01	11/20/2002	GW		4.2	1 U	2.7	1 U	9.5	448	18.2	1 U	1 U				
Shallow	SW 46-01	12/2/2002	GW		4.5	1 U	3	1 U	10.5	417	18.7	20.3	1 U				
Shallow	SW 46-01	3/5/2003	GW		3.8		2.3	1 U	10.9	437	14.6	19	1 U				
Shallow	SW 46-01	5/20/2003	GW	990	3.3	1 U	2	1 U	9.1	381	12.3	17.7	1 U				
Shallow	SW 46-01	6/10/2003	GW	980													
Shallow	SW 46-01	9/29/2003	GW		2.9	1 U	2	1 U	7.6	624	46.1	74.6	1 U				
Shallow	SW 46-01	9/29/2003	GW	1236													
Shallow	SW 46-01	1/22/2004	GW		2.2 J	1 U	1.5 J	1 U	5.8	483	26	55	1 U				
Shallow	SW 46-01	5/10/2004	GW	1420	4 J	0.8 U	2 J	1 U	9	620	27	66	1 U			0.5 U	
Shallow	SW 46-01	5/10/2004	GW	1280	4 J	0.8 U	2 J	1 U	9	650	27	65	1 U			0.5 U	
Shallow	SW 46-01	8/24/2004	GW	1610	4 J	0.8 U	3 J	1 U	7	520	34	50	1 U			0.5 U	
Shallow	SW 46-01	11/10/2004	GW	1750	3 J	0.8 U	3 J	1 U	8	280	25	43	1 U			0.5 U	
Shallow	SW 46-01	3/4/2005	GW	1790	3 J	0.8 U	3 J	1 U	6	300	29	43	1 U			0.5 U	
Shallow	SW 46-01	5/12/2005	GW	1370	3 J	0.8 U	2 J	1 U	6	300	24	33	1 U			0.5 U	
Shallow	SW 46-01	5/12/2006	GW	1600	3 J	0.8 U	3 J	1 U	7	530	40	53	1 U			0.5 U	
Shallow	SW 46-01	11/16/2006	GW	1200	6	0.8 U	2 J	1 U	5 J	400	50	44	1 U			0.5 U	
Shallow	SW 46-01	2/15/2007	GW	990	3 J	0.8 U	2 J	1 U	5 J	460	50	41	1 U			0.5 U	
Shallow	SW 46-01	10/2/2007	GW	1000	2 J	0.8 U	2 J	1 U	4 J	260	43	58	1 U			0.5 U	
Shallow	SW 46-01	5/20/2008	GW	710	50 UJ	50 UJ	50 UJ	50 UJ	50 UJ	290 J	50 UJ	99 J	50 UJ				
Shallow	SW 46-01	7/31/2009	GW		0.8 UJ	0.8 U	1 U	1 U	2 J	340	41	81	1 U	70 U	0.5 U		
Shallow	SW 46-01	8/4/2009	GW	660													
Shallow	SW 46-01	3/29/2010	GW	560	1 J	0.8 U	1 U	1 U	2 J	270	24	38	1 U	70 U	0.5 U		
Shallow	SW 46-01	9/13/2011	GW	860	0.8 U	0.8 U	1 U	1 U	1 J	300	21	31	1 U			0.5 U	
Shallow	SW 46-01	12/13/2011	GW		0.8 U	0.8 U	1 U	1 U	2 J	240	24	44	1 U			0.5 U	
Shallow	SW 46-01	5/16/2012	GW		1 J	0.8 U	1 U	1 U	2 J	380	26	37	1 U			0.5 U	
Shallow	SW 46-01	5/30/2013	GW	820	1 J	0.8 U	1 U	1 U	2 J	400	21	35	1 U			0.5 U	
Shallow	SW 46-01	5/14/2014	GW		0.7 J	0.5 U	0.5 U	0.5 U	1	320	14	23	0.5 U			0.5 U	
Shallow	SW 46-01	11/11/2014	GW		1 j	0.5 U	0.6 J	0.5 U	1	380 Ej	30	51	0.5 U			0.5 U	
Shallow	SW 46-01	5/13/2015	GW	540	0.7 J	0.5 U	0.5 U	0.5 U	1	260	14	21	0.5 U			0.5 U	
Shallow	SW 46-01	3/30/2016	GW	480	1	0.5 U	0.5 U	0.5 U	0.9 J	300	14	23	0.5 U			0.5 U	
Shallow	SW 46-01	4/18/2017	GW	690	0.9 J	0.5 U	0.5 U	0.5 U	0.8 J	300	13	20	0.5 U			0.5 U	
Shallow	SW 70-01	2/3/2004	GW		6.9	1 U	3.1	1 U	1 U	1 U	1 U	1 U	1 U				
Shallow	SW 70-01	5/11/2004	GW	2290													
Shallow	SW 70-01	8/19/2004	GW	2970													
Shallow	SW 70-01	11/4/2004	GW	2400													
Shallow	SW 70-01	3/3/2005	GW	6110													
Shallow	SW 70-01	5/17/2005	GW	3590													
Shallow	SW 70-01	5/11/2006	GW	870													
Shallow	SW 70-01	8/4/2009	GW	150													
Shallow	SW 70-01	3/17/2010	GW	90													
Shallow	SW 70-01	9/13/2011	GW	110	3 J	0.8 U	3 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 70-01	5/15/2012	GW		3 J	0.8 U	3 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 70-01	5/24/2013	GW	65	2 J	0.8 U	1 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 70-01	5/15/2014	GW	82	1	0.5 U	0.8 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			0.5 U	

Abandon: exceeds SLs for perchlorate, PCE and TCE, with stable to decreasing concentrations; redundant with upgradient monitoring at SW 40-57 (12 ft) and downgradient detections and monitoring at SW 47-02 (4 ft) and SW 28-41 (8 ft)

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Abandon: exceeded SL for perchlorate only when last sampled in 2014, with decreasing trend; redundant with downgradient detections and perchlorate monitoring at SW 74-07 (7 ft)

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Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
		Screening Levels (SLs):			15	200	5	140	5	7	5	5	70	2	7.8	5	
Shallow	SW 74-02	11/4/2002	GW		1 U	1 U	1 U	1 U	1 U	1218	12.4	20.5	1 U				
Shallow	SW 74-02	5/21/2003	GW	17100	1 U	1 U	1 U	1 U	1 U	7.6	1.3	1 U	1 U				
Shallow	SW 74-02	2/2/2004	GW		1 U	1 U	1 U	1 U	1 U	1935	30.2	37.5	1 U				
Shallow	SW 74-02	8/30/2004	GW	10300	4 U	4 U	5 U	5 U	4 U	1700	25	42	5 U			3 U	
Shallow	SW 74-02	11/4/2004	GW	403	6	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	5 J	1 U			0.5 U	
Shallow	SW 74-02	3/4/2005	GW	3.3 J	0.8 U	0.8 U	2 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 74-02	8/19/2009	GW	720	0.8 U	0.8 U	1 U	1 U	0.8 U	480	10	16	1 U	70 U		0.5 U	
Shallow	SW 74-02	3/18/2010	GW	390	0.8 U	0.8 U	1 U	1 U	0.8 U	280	5	8	1 U	70 U		0.5 U	
Shallow	SW 74-02	9/14/2011	GW	190	2 J	0.8 U	1 J	1 U	0.8 U	28	1 J	0.9 J	1 U			0.5 U	
Shallow	SW 74-02	5/15/2012	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	280	8	11	1 U			0.5 U	
Shallow	SW 74-02	5/15/2012	GW		0.8 U	0.8 U	1 U	1 U	0.8 U	280	8	10	1 U			0.5 U	
Shallow	SW 74-02	5/31/2013	GW	160	0.8 U	0.8 U	1 U	1 U	0.8 U	59	4 J	4 J	1 U			0.5 U	
Shallow	SW 74-02	5/17/2014	GW	110	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	22	2	1	0.5 U			0.5 U	
Shallow	SW 74-06	5/12/2004	GW	221	12	0.8 U	10	1 U	7	280	62	49	7			0.5 U	
Shallow	SW 74-06	8/20/2004	GW	132	16	0.8 U	10	1 U	6	230	38	60	6			0.5 U	
Shallow	SW 74-06	11/11/2004	GW	150	9	0.8 U	12	1 U	7	240	32	50	7			0.5 U	
Shallow	SW 74-06	3/4/2005	GW	60.1	7	0.8 U	10	1 U	7	250	33	48	5 J			0.5 U	
Shallow	SW 74-06	5/17/2005	GW		12	0.8 U	10	1 U	7	260	23	42	5 J			0.5 U	
Shallow	SW 74-06	5/17/2006	GW		4 J	0.8 U	9	1 U	7	180	24	29	4 J			0.5 U	
Shallow	SW 74-06	8/18/2009	GW	72	3 J	0.8 U	12	1 U	5	260	49	46	6	70 U		0.5 U	
Shallow	SW 74-06	3/18/2010	GW	80	3 J	0.8 U	11	1 U	0.8 U	260	47	39	5	70 U		0.5 U	
Shallow	SW 74-06	9/14/2011	GW	140	2 J	0.8 U	9	1 U	2 J	180	44	32	1 J			0.5 U	
Shallow	SW 74-06	5/14/2012	GW	110	2 J	0.8 U	7	1 U	2 J	180	44	32	1 J			0.5 U	
Shallow	SW 74-06	5/31/2013	GW	85	2 J	0.8 U	7	1 U	2 J	140	45	31	1 U			0.5 U	
Shallow	SW 74-06	5/17/2014	GW	53	1	0.5 U	6	0.5 U	2	120	43	32	1			0.5 U	
Shallow	SW 105-01	11/5/2002	GW		2.7	1 U	1 U	1 U	1.8	2.8	1 U	1 U	1 U				
Shallow	SW 105-01	5/19/2003	GW	932	2.7	1 U	1 U	1 U	2.8	5.4	1 U	1 U	1 U				
Shallow	SW 105-01	5/19/2003	GW	938													
Shallow	SW 105-01	5/6/2004	GW	19000													
Shallow	SW 105-01	8/19/2004	GW	16100													
Shallow	SW 105-01	11/2/2004	GW	11700													
Shallow	SW 105-01	3/4/2005	GW	6510													
Shallow	SW 105-01	5/18/2005	GW	2570													
Shallow	SW 105-01	5/11/2006	GW	8100													
Shallow	SW 105-01	5/30/2008	GW	0.43 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ			5 UJ	
Shallow	SW 105-01	9/9/2011	GW	700	0.8 U	0.8 U	1 U	1 U	0.8 U	5 J	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 105-01	5/9/2012	GW	8700	2 J	0.8 U	1 J	1 U	2 J	34	1 U	4 J	1 U			0.5 U	
Shallow	SW 105-01	5/30/2013	GW	46	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U			0.5 U	
Shallow	SW 105-01	5/14/2014	GW	1 U													
Shallow	SW 105-01	5/13/2015	GW	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			0.5 U	
Shallow	SW 105-01	3/31/2016	GW	550	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8 J	0.5 U	0.5 U	0.5 U			0.5 U	
Shallow	SW 105-01	4/19/2017	GW	0.8 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			0.5 U	

Table 3 - Shallow Groundwater Historical Results and Well Abandonment Rationale
Excluding Wells in Project Cub Area

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale	Sample Depth
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5		(ft)
Shallow	SW 105-03D	5/4/2004	GW	7910	6	0.8 U	1 J	1 U	16	26	1 U	2 J	1 U		0.5 U	Abandon: exceeds SLs for perchlorate and PCE, which have decreasing trends, and are significantly lower since soil IMs in 2011; redundant with other TTU monitoring for perchlorate and VOCs in the vicinity, and downgradient detections of same COCs at BW 14-02S (16 ft)	18
Shallow	SW 105-03D	8/19/2004	GW	6240													
Shallow	SW 105-03D	11/4/2004	GW	7390													
Shallow	SW 105-03D	3/2/2005	GW	6660													
Shallow	SW 105-03D	5/18/2005	GW	9100													
Shallow	SW 105-03D	5/18/2006	GW	14000													
Shallow	SW 105-03D	10/4/2007	GW	20000	6	0.8 U	3 J	1 U	5	68	1 J	6	1 U		0.5 U		
Shallow	SW 105-03D	5/31/2008	GW	12000	2.4 J	5 UJ	1.3 J	5 UJ	2.8 J	29 J	5 UJ	3.6 J	5 UJ		5 UJ		
Shallow	SW 105-03D	8/12/2009	GW	19000	4 J	0.8 U	2 J	1 U	11	46	1 U	5	1 U	70 U	0.5 U		
Shallow	SW 105-03D	3/29/2010	GW	3400	1 J	0.8 U	1 U	1 U	2 J	19	1 U	2 J	1 U	70 U	0.5 U		
Shallow	SW 105-03D	9/12/2011	GW	28000	2 J	0.8 U	2 J	1 U	3 J	33	1 J	6	1 U		0.5 U		
Shallow	SW 105-03D	4/3/2012	GW	8100	2 J	0.8 U	1 J	1 U	3 J	42	1 U	6	1 U		0.5 U		
Shallow	SW 105-03D	5/24/2013	GW	2300	2 J	0.8 U	1 J	1 U	2 J	35	1 U	4 J	1 U		0.5 U		
Shallow	SW 105-03D	5/16/2014	GW	1300	0.5 U	0.5 U	0.5 U	0.5 U	0.6 J	14	0.5 U	1	0.5 U		0.5 U		
Shallow	SW 105-03D	5/15/2015	GW	3200	0.9 J	0.5 U	0.6 J	0.5 U	1	19	0.5 U	2	0.5 U		0.5 U		
Shallow	SW 105-03D	3/30/2016	GW	3200	1	0.5 U	0.5 J	0.5 U	0.5 U	14	0.5 U	1	0.5 U		0.5 U		
Shallow	SW 105-03D	4/18/2017	GW	1300	0.8 J	0.5 U	0.7 J	0.5 U	0.5 U	8	0.5 U	2	0.5 U		0.5 U		

Notes: All wells were evaluated for potential abandonment with respect to the objectives of the approved 2015 Sampling and Analysis Plan, water level needs, if any, the general presence of stable to decreasing concentrations trends across the Site, geographic position, plume position, planned restriction against the use of ground water, planned requirement for vapor barriers as part of redevelopment, USEPA's Vapor Intrusion Screening Level calculator, and redundancy (evaluated by COCs, sample depth, and groundwater flow considerations) in meeting objectives. The evaluation of all wells utilized the most recent sampling data for each well, which is from 2017 for source, performance, and sentinel wells and from the years indicated in the "rationale summary" column for "water level" only wells under the 2015 SAP.

* The rationale for well abandonment may include reference to other wells with an indication of sampling depth in those other wells provided in parentheses.

¹ Regulatory oversight of TTU monitoring was transferred from VA DEQ to USEPA on March 21, 2012 as part of VA DEQ's approval of the closure of Thermal Treatment Facility soils in the northwestern part of the Site. Five wells were transferred in the monitoring program (BW TTU-02S, BW TTU-02D, BW TTU-05, SW TTU-03, and SW TTU-05.) BW TTU-02S and BW TTU-02D were previously abandoned on March 29, 2012.

111TCA = 1,1,1-trichlorethane
 112TCA = 1,1,2-trichlorethane
 11DCA = 1,1-dichlorethane
 12DCA = 1,2-dichlorethane
 11DCE = 1,1-dichlorethene
 PCE = tetrachloroethene
 TCE = trichloroethene
 cis-12DCE = cis1,2-dichloroethene
 VC = vinyl chloride

Table 4 - Surface Water Rationale

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5	
Surface	STR 02	2/18/2002	SW		1 U	1 U	1.9	1 U	1.3	1 U	2.9	1.1	1 U			Surface Water Location - dry and not sampled since 2012; remove from sampling program
Surface	STR 02	5/18/2002	SW		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Surface	STR 02	11/5/2002	SW		1 U	1 U	1 U	1 U	1 U	1 U	1.4	1 U	1 U			
Surface	STR 02	2/13/2003	SW		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1.2 J	1 UJ	1 UJ			
Surface	STR 02	5/23/2003	SW	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Surface	STR 02	8/7/2003	SW	2 U	1 U		2.7	1 U	1.9	1 U	3.5	1 U	1 U			
Surface	STR 02	8/7/2003	SW	4 U												
Surface	STR 02	11/22/2003	SW	4 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Surface	STR 02	2/12/2004	SW		1.9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Surface	STR 02	3/9/2004	SW	5.7	1 U	1 U	2.3	1 U	2.1 U	1 U	2.9	1 U	1 U			
Surface	STR 02	3/9/2004	SW	4.3 J												
Surface	STR 02	11/23/2005	SW	8.1	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 02	2/16/2006	SW	0.91 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 02	5/18/2006	SW	0.2 U	0.8 U	0.8 U	5	1 U	4 J	0.8 U	6	0.8 U	1 U		0.5 U	
Surface	STR 02	2/21/2007	SW	0.5 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 02	3/26/2010	SW	0.2 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	
Surface	STR 02	11/11/2010	SW	0.2 U	0.8 U	0.8 U	1 J	1 U	1 J	0.8 U	2 J	0.8 U	1 U	70 U	0.5 U	
Surface	STR 02	9/8/2011	GW	1.8	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 02	5/17/2012	SW	0.2 U	0.8 U	0.8 U	2 J	1 U	2 J	0.8 U	3 J	0.8 U	1 U		0.5 U	
Surface	STR 04	2/18/2002	SW		2.9	1 U	1 U	1 U	1.1	9.5	1.5	1.6	1 U			Surface Water Location - Retain and Sample
Surface	STR 04	4/29/2002	SW		6 J		U	5 J	U	13	3 J					
Surface	STR 04	5/18/2002	SW		1 U	1 U	1 U	1 U	1 U	4.2	1 U	1 U	1 U			
Surface	STR 04	8/7/2002	SW		1.1	1 U	1 U	1 U	1 U	1.7	1.7	1 U	1 U			
Surface	STR 04	11/5/2002	SW		1 U	1 U	1 U	1 U	1 U	7.5	1.1	1.6	1 U			
Surface	STR 04	2/13/2003	SW		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	9.2 J	1.4 J	2.4 J	1 UJ			
Surface	STR 04	5/23/2003	SW	32.1	1 U	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U			
Surface	STR 04	8/7/2003	SW	7.7	1 U		1 U	1 U	1 U	1 U	1 U	1 U	1 U			
Surface	STR 04	8/7/2003	SW	6.9												
Surface	STR 04	11/22/2003	SW	28	1 U	1 U	1 U	1 U	1 U	4.5	1 U	1.4	1 U			
Surface	STR 04	2/12/2004	SW		1 U	1 U	1 U	1 U	1 U	3.6	1 U	1.1	1 U			
Surface	STR 04	3/9/2004	SW	68.4	1 U	1 U	1 U	1 U	1 U	4.2	1 U	1.3	1 U			
Surface	STR 04	3/9/2004	SW	61.1												
Surface	STR 04	5/17/2004	SW	10.6	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 04	5/17/2004	SW	8.6												
Surface	STR 04	8/26/2004	SW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 04	8/26/2004	SW	0.7 U	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	STR 04	11/8/2004	SW	28.1	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 U	1 J	1 U		0.5 U	
Surface	STR 04	11/8/2004	SW	28.4	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 U	1 J	1 U		0.5 U	
Surface	STR 04	3/3/2005	SW	74	0.8 U	0.8 U	1 U	1 U	0.8 U	4 J	1 U	2 J	1 U		0.5 U	
Surface	STR 04	3/3/2005	SW	74.5	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 U	1 J	1 U		0.5 U	
Surface	STR 04	5/19/2005	SW	24.6	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	1 J	1 U		0.5 U	
Surface	STR 04	5/19/2005	SW	26	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.9 J	1 U		0.5 U	

Table 4 - Surface Water Rationale

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale
Screening Levels (SLs):				15	200	5	140	5	7	5	5	70	2	7.8	5	
Surface	STR 04	8/17/2005	SW	2	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U		Surface Water Location - Retain and Sample
Surface	STR 04	8/17/2005	SW	2.3	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U		
Surface	STR 04	11/23/2005	SW	23	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.9 J	1 U	0.5 U		
Surface	STR 04	11/23/2005	SW	27	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.9 J	1 U	0.5 U		
Surface	STR 04	2/16/2006	SW	20	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	1 J	1 U	0.5 U		
Surface	STR 04	2/16/2006	SW	22	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	1 J	1 U	0.5 U		
Surface	STR 04	5/18/2006	SW	13	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	1 J	1 U	0.5 U		
Surface	STR 04	5/18/2006	SW	14	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	1 J	1 U	0.5 U		
Surface	STR 04	8/15/2006	SW	1.5	3 J	0.8 U	3 J	1 U	3 J	0.8 U	1 U	0.8 U	1 U	0.5 U		
Surface	STR 04	8/15/2006	SW	1.5	3 J	0.8 U	3 J	1 U	2 J	0.8 U	1 U	0.8 U	1 U	0.5 U		
Surface	STR 04	11/17/2006	SW	11	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U	0.5 U		
Surface	STR 04	2/13/2007	SW	42	0.8 U	0.8 U	1 U	1 U	0.8 U	8	2 J	4 J	1 U	0.5 U		
Surface	STR 04	9/25/2007	SW	0.2 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U		
Surface	STR 04	8/19/2009	SW	60	2 J	0.8 U	3 J	1 U	2 J	3 J	3 J	2 J	1 U	70 U	0.5 U	
Surface	STR 04	3/26/2010	SW	35	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U	70 U	0.5 U	
Surface	STR 04	11/11/2010	SW	13	0.8 U	0.8 U	1 U	1 U	0.8 U	6	1 U	4 J	1 U	70 U	0.5 U	
Surface	STR 04	9/1/2011	SW	34	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U	1.1 J	0.5 U	
Surface	STR 04	9/1/2011	SW	31	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	0.8 U	1 U	1.2 J	0.5 U	
Surface	STR 04	5/17/2012	SW	9.5	0.8 U	0.8 U	1 U	1 U	0.8 U	2 J	1 U	2 J	1 U	0.5 U		
Surface	STR 04	5/29/2013	SW	14	0.8 U	0.8 U	1 U	1 U	0.8 U	1 J	1 U	0.8 U	1 U	0.55	0.5 U	
Surface	STR 04	11/19/2013	SW	21	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 U	0.9 J	1 U	70 U	0.5 U	
Surface	STR 04	5/17/2014	SW	7.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.7 J	0.5 U		0.5 U	
Surface	STR 04	5/12/2015	SW	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	0.9 J	0.5 U		0.5 U	
Surface	STR 04	11/5/2015	SW	9.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3	0.5 U	2	0.5 U		0.5 U	
Surface	STR 04	3/29/2016	SW	20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.8 J	0.5 U		0.5 U	
Surface	STR 04	10/26/2016	SW	9.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	0.8 J	0.5 U		0.5 U	
Surface	STR 04	4/18/2017	SW	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	1	0.5 U		0.5 U	
Surface	STR 40-15	5/18/2004	SW	40.9												
Surface	STR 40-15	5/19/2005	SW	67.9	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	0.5 U		
Surface	STR 40-15	5/18/2006	SW	23	0.8 U	0.8 U	1 U	1 U	0.8 U	4 J	2 J	8	1 U	0.5 U		
Surface	STR 40-15	11/17/2006	SW	24												
Surface	STR 40-15	8/19/2009	SW	7.3	0.8 U	0.8 U	1 U	1 U	0.8 J	140	34	230	8	70 U	0.5 U	
Surface	STR 40-15	3/26/2010	SW	5.6	0.8 U	0.8 U	1 U	1 U	0.8 U	3 J	1 U	7	1 U	70 U	0.5 U	
Surface	STR 40-15	9/1/2011	GW	0.27 J	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	2 J	1 U	0.5 U		
Surface	STR 40-15	5/17/2012	SW		0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	1 J	1 U	0.5 U		
Surface	STR 40-15	5/29/2013	SW	15	0.8 U	0.8 U	1 U	1 U	0.8 U	34	8	65	2 J	0.5 U		
Surface	STR 40-15	5/17/2014	SW		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3	0.5 U	0.5 U		
Surface	STR 40-15	5/12/2015	SW	4.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	
Surface	STR 40-15	3/29/2016	SW	6.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6	1	10	0.5 U	0.5 U		
Surface	STR 40-15	4/18/2017	SW	3.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	

Table 4 - Surface Water Rationale

Aquifer	Location	Date Sampled	Matrix	Perchlorate µg/L	111TCA µg/L	112TCA µg/L	11DCA µg/L	12DCA µg/L	11DCE µg/L	PCE µg/L	TCE µg/L	cis-12DCE µg/L	VC µg/L	14Dioxane µg/L	Benzene µg/L	Rationale
		Screening Levels (SLs):		15	200	5	140	5	7	5	5	70	2	7.8	5	
Surface	West 01	2/4/2009	SW	1400	0.8 U	0.8 U	9	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	Surface Water Location - Retain and Sample
Surface	West 01	3/26/2010	SW	230	0.8 U	0.8 U	1 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	
Surface	West 01	3/26/2010	SW	240	0.8 U	0.8 U	1 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U	70 U	0.5 U	
Surface	West 01	9/8/2011	GW	88	0.8 U	0.8 U	1 U	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	West 01	5/30/2013	SW	1800	0.8 U	0.8 U	3 J	1 U	0.8 U	0.8 U	1 U	0.8 U	1 U		0.5 U	
Surface	West 01	5/18/2014	SW	1200	0.5 U	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Surface	West 01	5/12/2015	SW	1100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U	
Surface	West 01	3/29/2016	SW	500	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	1 J	0.5 U	0.5 U	
Surface	WEST 01	4/18/2017	SW	210	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	

Notes: All wells were evaluated for potential abandonment with respect to the objectives of the approved 2015 Sampling and Analysis Plan, water level needs, if any, the general presence of stable to decreasing concentrations trends across the Site, geographic position, plume position, planned restriction against the use of ground water, planned requirement for vapor barriers as part of redevelopment, USEPA's Vapor Intrusion Screening Level calculator, and redundancy (evaluated by COCs, sample depth, and groundwater flow considerations) in meeting objectives. The evaluation of all wells utilized the most recent sampling data for each well, which is from 2017 for source, performance, and sentinel wells and from the years indicated in the "rationale summary" column for "water level" only wells under the 2015 SAP.

* The rationale for well abandonment may include reference to other wells with an indication of sampling depth in those other wells provided in parentheses.

111TCA = 1,1,1-trichlorethane

112TCA = 1,1,2-trichlorethane

11DCA = 1,1-dichlorethane

12DCA = 1,2-dichlorethane

11DCE = 1,1-dichloroethene

PCE = tetrachloroethene

TCE = trichloroethene

cis-12DCE = cis1,2-dichloroethene

VC = vinyl chloride

TABLE 5
Revised Sampling Plan
Atlantic Research Corporation, Gainesville, Virginia

Location	Aquifer Designation	Purpose	Water Levels Annually	Perchlorate	VOCs	1,4-Dioxane
BW 14-02S	Shallow	Performance	✓	✓	✓	
BW 21-04D	Shallow	Performance	✓	✓	✓	
BW 28-02S	Shallow	Performance	✓	✓	✓	✓
BW 28-04D	Shallow	Performance	✓	✓	✓	
BW 45-03S	Shallow	Performance	✓	✓	✓	
BW 79-02S	Shallow	Source	✓	✓	✓	✓
BW CM-01S	Shallow	Source	✓	✓	✓	
BW CG-01D	Shallow	Source	✓	✓	✓	
BW TTU-03D	Shallow	Performance	✓	✓	✓	
SW 5-04	Shallow	Source	✓	✓	✓	✓
SW 28-41	Shallow	Performance	✓	✓	✓	
SW 40-07A	Shallow	Source	✓	✓	✓	
SW 40-57	Shallow	Performance	✓	✓	✓	
SW 42-02	Shallow	Performance	✓	✓	✓	
SW 47-02	Shallow	Performance	✓	✓	✓	
SW 74-07	Shallow	Performance	✓	✓	✓	
SW 200-02	Shallow	Sentinel	✓	✓	✓	
SW 212-01	Shallow	Sentinel	✓	✓	✓	
SW 222-02	Shallow	Sentinel	✓	✓	✓	
SW SB-03	Shallow	Sentinel	✓	✓	✓	✓
SW TTU-03	Shallow	Performance	✓	✓	✓	
BW 78-12D	Deep	Source	✓	✓		
BW CM-03	Deep	Water Level	✓			
BW NE-01D	Deep	Water Level	✓			
DW 76-01	Deep	Source	✓	✓	✓	✓
DW 200-01	Deep	Sentinel	✓	✓	✓	
DW 213-01	Deep	Performance	✓	✓		
DW SB-01	Deep	Sentinel	✓	✓	✓	
DW SB-02	Deep	Sentinel	✓	✓	✓	✓
DW-6	Deep	Water Level	✓			
DW-12	Deep	Sentinel	✓	✓	✓	✓
DW-13	Deep	Capture	✓	✓	✓	✓
DW-13 MID	Deep	Port Sampling			✓	
DW-15	Deep	Performance	✓		✓	
DW-16	Deep	Performance	✓		✓	
DW-18	Deep	Performance	✓		✓	
DW-20	Deep	Performance	✓	✓	✓	
DW-23	Deep	Performance	✓	✓	✓	✓
DW-25	Deep	Water Level	✓			
DW-26I	Deep	Source	✓	✓	✓	
DW-28I	Deep	Source	✓	✓	✓	✓
DW-28D	Deep	Source	✓	✓	✓	
DW-29S	Deep	Source	✓	✓	✓	
DW-29I	Deep	Water Level	✓			
DW-30S	Deep	Performance	✓	✓	✓	
DW-32I	Deep	Source	✓		✓	✓



TABLE 5
Revised Sampling Plan
Atlantic Research Corporation, Gainesville, Virginia

Location	Aquifer Designation	Purpose	Water Levels Annually	Perchlorate	VOCs	1,4-Dioxane
DW-36D	Deep	Water Level	✓			
DW-72B	Deep	Source	✓		✓	✓
IW-6	Deep	Source	✓	✓	✓	
IW-7	Deep	Backup Injection				
IW-8	Deep	Injection				
STR 04	Surface water	Sentinel		✓	✓	
STR 40-15	Surface water	Performance		✓	✓	
West 01	Surface water	Source		✓	✓	

Notes:

All locations will be sampled annually during the Spring. Sentinel locations and DW-13 will also be sampled semi-annually.

DW-13 and DW-13 MID are sampled within the NDTs system treatment building.

Field parameter will be collected each time a well is sampled.

Field parameters include temperature, pH, ORP, DO, conductivity, and water levels.

DW-13 may also be sampled for other constituents not listed to support operation and evaluation of the northern deep groundwater treatment system (NDTS)

VOCs - volatile organic compounds

APPENDIX A

WELL ABANDONMENT STATEMENT OF WORK

DATE: May 10, 2017

SUBJECT: Atlantic Research Corporation Facility
Gainesville, Virginia,
Sequa Corporation

PROJECT NO.: 229931.0000
Statement of Work
Well Abandonment

1.0 OBJECTIVES

TRC Environmental (TRC) has been retained by the Atlantic Research Corporation (ARC) for ongoing investigation and remediation of the ARC facility located in Gainesville, Virginia (Site). This Statement of Work (SOW) is for the completion of well abandonment of wells no longer needed at the Site. The proper abandonment of unneeded wells is a best management practice and is particularly warranted in consideration of the planned redevelopment of the Site.

Approximately 93 wells were proposed for supplemental abandonment in the Sampling and Well Reduction Plan by TRC (2017 Plan), dated May 9, 2017. The abandonment program is summarized in Table 1 (Proposed Well Abandonment Summary [to be created when approved]). Site activities will be performed in accordance with TRC's Health and Safety Plan (HASP) for the Site and Standard Operating Procedures (SOPs).

2.0 WELL ABANDONMENT METHODOLOGY

The following methodology will be implemented with the objective of achieving abandonment of all wells/well points identified in Table 1 and not inadvertently abandoning other wells to be retained.

The methodology will consist of the following primary field and quality assurance elements:

- TRC personnel will coordinate and facilitate well abandonment by the Driller and ensure that documentation of abandonment is recorded and reported.
- In preparation for abandonment, TRC will identify, locate, and mark wells planned for abandonment. It is recommended that wells be flagged and marked for easier future reference during the abandonment event. Wells may be located using handheld GPS and Site maps. It is imperative that any well to be abandoned is confirmed as the correct well by cross referencing figures, total depth, identifying markers and/or other well specific information so as to not damage a well that is planned for future sampling.
- TRC will communicate with the Driller regarding the location of each well to be abandoned and they will jointly identify access requirements (e.g., clearing requirements), if any, to facilitate abandonment.
- Prior to actual abandonment of a well by the Driller, measurements of the static water level and total depth will be made by TRC and recorded on field forms or in the logbook. Total depth will be checked against Table 1 as further confirmation of the well identification. Total depth and depth to water will be communicated to the Driller to facilitate field implementation of the well abandonment.
- Eichelbergers, Inc. (Eichelbergers) will provide Driller services for well abandonment at the Site. Eichelbergers has provided well abandonment and installation services at the Site and is familiar with

Site conditions. In accordance with its quote of February 27, 2017, Eichelbergers will provide a crew, trucks, grouting equipment, and supplies to achieve abandonment.

- A Field Form documenting abandonment is required for each well. The Field Form will be supplied by the Driller and submitted to the applicable regulatory agency following completion.

3.0 WELL ABANDONMENT PROCEDURES

The general abandonment procedures for all wells are as follows. Abandonment procedures will be in accordance with the Virginia Administrative Code (VAC) at 12 VAC § 5-630-450. The specific well abandonment procedures will be determined on a well by well basis in consultation with the selected drilling abandonment contractor:

- Well screens and inner and outer casings will not be removed as the wells will be grouted in place;
- Wells will be backfilled with grout using a tremie pipe and grouting from the bottom up, to a depth approximately five feet below ground surface;
- Open-borehole wells will be backfilled with grout using tremie pipe and grouting from the bottom up to a depth approximately five feet below ground surface, or in some cases, depending on the depth to groundwater and the specifics of the rock formation, may include filling part of the borehole within the bedrock with clean sand or gravel. In the latter case, grouting with a tremie pipe from bottom up will occur within the bedrock portion of the borehole for at least the upper five feet of the bedrock;
- The top five feet of the casing will be removed, and any annular space found around the remaining casing will be tremie grouted to the maximum depth possible;
- A grout or clay slurry will then be installed to completely fill the borehole void from five feet below ground surface to ground surface, and
- If a well that is recommended for abandonment is nested in the same completion/borehole as a well that is to be maintained as part of the monitoring network, then that well will be temporarily abandoned by installing a water tight sealing well cap. Once the monitoring activities for the nested well are complete and the nested well is deemed appropriate to abandon, all wells in the nest will be abandoned following the procedure summarized above.
- If artesian wells are encountered discuss with the driller and project team prior to proceeding.

4.0 Project TEAM

Project Manager – Geoffrey S. King

Field Coordinator/Quality Assurance Officer – John Lair

Field Team Leader – John Lair

Field Personnel – To Be Determined

Attachments:

- Health and Safety Plan (HASP)
- Table 1 (Groundwater Monitoring and Proposed Well Abandonment Summary; from Work Plan)